

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF NORTH CAROLINA
ASHEVILLE DIVISION

STATE OF NORTH CAROLINA)
ex rel. Roy Cooper, Attorney)
General,)
)
Plaintiff,) No. 1:06-CV-20
)
vs.) **VOLUME 1A**
)
TENNESSEE VALLEY AUTHORITY,) [Page 1-135]
)
Defendant.)
_____)

TRANSCRIPT OF TRIAL PROCEEDINGS
BEFORE THE HONORABLE LACY H. THORNBURG
UNITED STATES DISTRICT COURT JUDGE
JULY 14th, 2008

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1 P R O C E E D I N G S
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3 THE COURT: We now call the case of the State of
4 North Carolina vs. Tennessee Valley Authority.

5 Is defendant ready to proceed?

6 MR. GULICK: We are, Your Honor.

7 THE COURT: And the Tennessee Valley Authority?

8 MR. LANCASTER: We are, Your Honor.

9 THE COURT: All right. I will recognize the
10 plaintiff, State of North Carolina, counsel for a 30-minute
11 opening statement. Not to exceed 30 minutes, that is. So
you may proceed.

12 MR. GULICK: Thank you, Your Honor. May it please
13 the Court.

14 It is a fair and reasonable demand on the part of
15 the sovereign that the air over its territory should not be
16 polluted, that the forests on its mountains should not be
17 destroyed or threatened by the act of persons beyond its
18 control. These are the words of the United States Supreme
19 Court, Your Honor, and this is the relief that the State of
20 North Carolina seeks from Tennessee Valley Authority in this
case.

22 Judge Thornburg, my name is Jim Gulick, and with me
23 at counsel table are my co-counsel, Mike Goodstein, Anne
24 Lynch and Mr. Marc Bernstein standing over here. Together,
25 we are here to represent the State of North Carolina in this

1 matter.

2 Common law public nuisance claims have existed for
3 centuries, and they provide a significant legal remedy for
4 the significant interference of public rights.

5 As the Supreme Court of the United States
6 recognized, air pollution is, quote, one of the most
7 notorious types of public nuisance in modern experience,
8 close quote.

9 In this case, we are proceeding under the laws of
10 the States of Kentucky, Tennessee and Alabama, which are the
11 states where the plants that emit the pollutants in question
12 that are owned by Tennessee Valley Authority exist. That's
13 where the pollution is emitted, but the harms from that
14 pollution come to the state of North Carolina here in the
15 mountains and elsewhere in the state.

16 Each of these states has found under its law that
17 air pollution can be actionable under the law of nuisance in
18 that state. Your Honor is already familiar with that law.
19 Injunctive relief is an appropriate remedy for the abatement
20 of a public nuisance.

21 Our proof will show, Your Honor, that the emissions
22 from Tennessee Valley Authority harm the public health and
23 environment of the state of North Carolina as well as
24 throughout the region. In particular, our proof will show
25 that their emissions cause premature death, cardiovascular

1 and respiratory disease, exacerbated asthma, and other
2 similar disease.

3 In addition, TVA's emissions have harmed and
4 continue to harm the environment of the state, degrading
5 visibility, especially the beautiful mountains of western
6 North Carolina, damaging the forests and streams with acid
7 deposition and causing damage from ozone. All of these
8 injuries are unreasonable interference with public rights in
9 the state of North Carolina.

10 TVA's emissions are also unreasonable, Your Honor,
11 because there is available to TVA reasonable approved and
12 feasible controls by which -- that they can install on their
13 plants to control their pollution to a very large degree.

14 In 2002, at the urging of its own citizens, some of
15 whom you will hear from in this case, the State of North
16 Carolina enacted the Clean Smokestacks Act.

17 The Clean Smokestacks Act requires the two large
18 public utilities in this state, which are privately owned,
19 investor-held utilities, Duke Power and Progress Energy, to
20 install pollution controls on their coal-fired facilities in
21 the state, reducing from 1998 levels by approximately 75
22 percent the pollution which was coming from those plants, and
23 they needed to be controlled. In addition, the control of
24 sulfur dioxide emissions and oxides of nitrogen, two
25 principal pollutants that are emitted, also will result in a

1 significant co-benefit of reducing mercury emissions from
2 these plant.

3 North Carolina has monitored the progress of the
4 installation of pollution controls from Duke and Progress
5 Energy and they are on track to complete the progress that
6 they have to make to complete those controls according to the
7 timetable set forth in the Clean Smokestacks Act.

8 You will hear they have met their 2007 cap under
9 that act for annual emissions of oxides of nitrogen, or Nox,
10 as it's called, and the sulfur dioxide emissions in
11 anticipation of the 2009 interim cap. And you will hear they
12 are indeed on schedule to meet the 2013 cap, which is the
13 ultimate cap provided in that act.

14 While North Carolina recognized the importance of
15 controlling the emissions from its own large utilities, it
16 also recognized that it was important, Your Honor, that it
17 needed to have pollution control from similar facilities
18 outside the state whose emissions of pollution are coming
19 into the state of North Carolina and also degrading its air
20 quality. Among those is Tennessee Valley Authority.

21 For a ten-year period starting in 1992, Your Honor,
22 the State of North Carolina and seven other states, and
23 numerous utilities and industry and environmental groups and
24 the federal government, joined in a process called the
25 Southern Appalachian Mountain Initiative, known as SAMI for

1 short. It was one of the participants. Indeed, it was one
2 of the contractors. The purpose of that was to try to find
3 out what was harming the visibility in the mountains, what
4 was causing the acidification of soils and streams and
5 otherwise damaging the flora of these mountains, in
6 particular, Class 1 areas in North Carolina, Great Smoky
7 Mountain National Park, Shining Rock Wilderness, Linville
8 Gorge and Joyce-Kilmer National Forest, as well as several
9 others outside the state.

10 Among SAMI's many lessons was that each state would
11 be the biggest beneficiary of its own reductions, and,
12 indeed, before the final ink was dry on the final SAMI report
13 in 2002, North Carolina had enacted the Clean Smokestacks
14 Act, putting into effect significant pollution controls on
15 the privately held utilities Duke and Progress Energy.

16 But SAMI also found, and I quote: Annual average
17 sulfate particle mass at the Great Smoky Mountain National
18 Park on the Tennessee/North Carolina border and at
19 Joyce-Kilmer, Slickrock, Shining Rock and Linville Gorge
20 Wilderness Areas in western North Carolina are most
21 influenced by sulfur dioxide reductions in Tennessee. You
22 will hear testimony that, by far, the largest contributor --
23 72 percent of the sulfur dioxide emissions in 2002 were from
24 Tennessee Valley Authority.

25 In addition, SAMI found that there were

1 contributions of pollution from other places as well,
2 including Alabama and Kentucky, states in which TVA also has
3 facilities. As I said, TVA participated in SAMI; TVA helped
4 develop that evidence; and TVA is aware of the findings that
5 were made.

6 TVA will state that it is planning to install
7 controls. But a plan, Your Honor, is not a legal
8 requirement. It is not a commitment. And plans change. As
9 the head of TVA's fossil-power generating system, Joseph
10 Bynum, said in his deposition in this case, quote: The plan
11 is not cast in concrete. You put a long-range plan into
12 place, you know that you're not going to do that particular
13 plan. Right now, it's almost a certainty. That's the one
14 thing you know, is it will not work out that way. Close
15 quote.

16 Your Honor, TVA's plans can and do change. But one
17 way to assure that, in fact, they install controls is for
18 this Court to require it on a schedule in a similar way the
19 State of North Carolina is requiring Duke and Progress Energy
20 by statute to put pollution controls in their facilities.

21 TVA operates 59 electrical generating units at 11
22 coal-fired power plants, Your Honor, that are shown on this
23 map. All these plants emit sulfur dioxide and oxides of
24 nitrogen and all of them contribute to the air quality
25 problems in North Carolina and throughout the region.

1 North Carolina's engineering expert, Mr. Jim
2 Staudt, will testify about the control technologies that TVA
3 installed in its facilities and that they can put on at
4 reasonable time and at reasonable cost by the year 2013 and
5 to bring their, TVA's, emissions down to 140,064 tons of
6 sulfur dioxide and 60,310 tons of nitrogen oxide by the year
7 2013. These caps are comparable to those required by the
8 State of North Carolina from Duke and Progress combined.

9 While the state has been progressing, Tennessee
10 Valley Authority has been working on some scrubbers on a
11 couple of plants in eastern Tennessee. And that's good.
12 That is part of the relief that the State of North Carolina
13 would like. Earlier this year in 2008, they announced a
14 scrubber and SCRs to control oxides of nitrogen on their
15 facility at John Sevier, another plant close to the state.
16 To ensure, however, that these are completed and operated
17 continually, it is necessary to have relief from this Court.
18 But good as these controls are, Your Honor, they're not
19 enough to abate all of the nuisance and the harm that's
20 coming from TVA's facilities. So we need further help from
21 the Court in assuring the level of controls that is
22 reasonable.

23 Our expert Sue Tierney will testify that the cost
24 of these controls is easily affordable by TVA and that it can
25 do so with only minimal impact on rates. So financial

1 considerations of the ability of TVA to fund this is not a
2 question.

3 TVA will argue that there are not enough
4 boilermakers or other personnel who are capable of putting
5 and installing these controls, but our expert Jim Staudt will
6 explain to you how it is that, in fact, there will be enough
7 available to install the controls in a timely manner by 2013.

8 Your Honor, our experts in air dispersion modeling,
9 Lyle Chinkin and Neil Wheeler, modeled an entire year worth
10 of emissions with and without the controls that North
11 Carolina seeks in this case to show what difference it would
12 make if those controls were installed. Their air dispersion
13 modeling shows the impacts from TVA's facilities, how sulfur
14 dioxide, on the map, the exhibit you see before you, is
15 emitted from these facilities, how it forms sulfate, the same
16 sulfate that causes haze and fine particulate matter, is
17 formed in the atmosphere, and where it travels, to North
18 Carolina and to other states throughout the region.

19 Your Honor, they have used the best possible
20 modeling, the most up-to-date modeling. Indeed, it's the
21 same computer model for simulating that is used by TVA's
22 experts in this case, and they use the same emissions
23 inventory, which you'll learn more about during the testimony
24 of this case.

25 Dr. David Peden, head of The Center For

1 Environmental Medicine, Asthma, and Lung Biology, who works
2 in research as to the effects of air pollution on human
3 health, will testify to you and show the clear relationship
4 between exposure to fine particulates and the occurrence of
5 adverse cardiovascular effects on human beings, including
6 myocardial infarction, arrhythmia, stroke, and premature
7 death from sudden cardiac death. In addition, it causes
8 lesser cardiovascular disease, as well, as a result of
9 hospitalization. Exposure to fine particulates also causes
10 chronic bronchitis and other respiratory disease.

11 Exposure to ozone, Dr. Peden will tell you, causes
12 exacerbation of asthma in many asthma patients, requiring
13 emergency room visits, requiring missed school, missed work,
14 and disruption in their lives. Ozone can also affect
15 otherwise healthy people, causing a rapid decrease in the
16 ability to breathe, especially among athletes and others,
17 such as children who are exercising heavily. Chronic
18 exposure -- Dr. Peden will tell you, Your Honor, chronic
19 exposure can actually affect lung development in children.

20 Dr. Donald Russell, a local asthma specialist, will
21 tell you about the impact that air pollution has had on his
22 patients, how he must advise them to stay indoors and avoid
23 going outside or exercising or going to school or going to
24 work to protect themselves from the effects of air pollution.

25 Our public health experts, Your Honor, will show

1 you the quantified effect of these exacerbations and
2 causation of disease. You have before you their calculation,
3 using 2000 population figures, of the premature deaths that
4 will be avoided each year with the installation of these
5 controls.

6 Your Honor, TVA's experts will question whether or
7 not it's possible to quantify this. Their experts,
8 Drs. Anderson and Moolgavkar, will testify for industry in
9 similar cases such as this, but theirs is the minority view,
10 as you will hear, and does not represent the majority view of
11 scientists knowledgeable in this area.

12 You will hear from individual citizens, such as
13 Will Harlan, an endurance runner, five-time champion running
14 to the top of Mount Mitchell, who, running on the Appalachian
15 Trail of the Great Smoky Mountain National Park, found
16 himself unable to breathe because of the pain of breathing on
17 a high ozone day. Others will have similar experience.

18 Dr. Leland Deck, our economic specialist, will
19 quantify for you the effects, the value, the cost, if you
20 will, of the benefit -- the value of the benefit of reducing
21 the disease that was otherwise quantified by our health
22 experts Levy and Spengler, and they will show you the very
23 substantial benefits which outweigh the costs to the
24 Tennessee Valley Authority of installing these controls.

25 Even if Your Honor were only to consider the

1 benefits in North Carolina, the benefits outweigh the cost to
2 TVA. However, we believe that the correct result, Your
3 Honor, is that you should -- if, indeed, you find that there
4 is public nuisance, that you should consider all the benefits
5 of abating the nuisance, not just the injury to plaintiff.

6 Your Honor, you will hear from local citizens and
7 business owners about the great value of good visibility in
8 the mountains. You will hear from visibility expert, John
9 Molenar, about how much increased visibility there will be as
10 a result of the pollution controls that will be installed.
11 You will hear a valuation of that that was done, prior to
12 this case, for the Blue Ridge Parkway, a unit of the national
13 park system, about the great value that visitors to the Blue
14 Ridge Parkway place on improved visibility.

15 You will hear from U.S. Forest Service air
16 resources specialist, Mr. Bill Jackson, who is also a plant
17 pathologist. He will describe for you the harm that ozone
18 and acid deposition are causing in the national forests and
19 wilderness areas in this state, including Shining Rock and
20 Linville Gorge. He will testify that many of the
21 high-altitude forests and streams are seriously impacted by
22 acid deposition, especially sulfate depositions from sulfur
23 dioxide emissions, and that they will not begin to recover
24 until that acid deposition is stopped. Linville Gorge, you
25 will hear, is in particular danger.

1 He will testify that the federal acid rain
2 amendments were not enough to protect the Class 1 areas in
3 the Southern Appalachians and that much more reduction is
4 needed, especially from utilities, such as Duke, such as
5 Progress, and such as TVA.

6 He will tell you that TVA's emissions are part of
7 the problem, especially in the Southern Appalachians, and
8 that deep reductions in these emissions must be part of the
9 solution if these national treasures are to be protected.

10 Ecology expert Dr. Charles Driscoll will testify
11 about the acidic deposition that alters soils, stresses
12 forest vegetation, acidifies lakes and streams and harms fish
13 and aquatic life. He will testify about the improvements in
14 acid deposition that will occur if you grant the relief that
15 we request, and that will include an 11 percent reduction in
16 sulfate deposition at Great Smoky Mountain National Park and
17 an 8.4 percent annual reduction at Mount Mitchell.

18 Secretary Bill Ross of the Department of
19 Environment and Natural Resources will testify as to the
20 importance of this relief, of protecting the air quality of
21 the State of North Carolina.

22 All these benefits are in addition to the
23 quantified benefits for health that you will hear testified
24 about.

25 Your Honor, TVA will argue to you that this case is

1 about Duke and Progress; they will argue to you that this
2 case is about pig farms or that it's about paper plants. But
3 this case is about TVA's emissions. They will argue to you
4 that the federal law, the Clean Air Act, is sufficient to
5 protect North Carolina. Unfortunately, Your Honor, it has
6 not been. Indeed, only last Friday, the U.S. District Court
7 of Appeals in the District of Columbia vacated the Clean Air
8 Interstate Rule of the EPA. There were many petitioners in
9 that case, Your Honor, almost all of them industries, who
10 believe that the value of their allowances could be used,
11 rather, to delay the installation of pollution controls as
12 being unfairly devalued, and similar arguments, or that they
13 shouldn't be included.

14 North Carolina, in contrast, argued that the CAIR
15 needed to be strengthened. North Carolina believed that EPA
16 had allowed this rule to extend the time in which pollution
17 controls needed to be installed way into the future, not in
18 time to help deal with the issues of health and the damage to
19 the environment, and, in particular, it was concerned that
20 the use of these allowances would allow plants upwind of
21 North Carolina to buy credits rather than make pollution
22 reductions.

23 The Court agreed with both of these arguments and
24 it said, for example, quote: Under CAIR, sources in Alabama
25 which contribute to nonattainment of the fine particulate

1 ambient air standard in Davidson County, North Carolina,
2 would not need to reduce their emissions at all. North
3 Carolina asked that this matter be sent back to EPA to be
4 corrected and specifically asked the Court, both in its
5 briefs and in oral argument, not to vacate the rule. But the
6 Court also agreed with many of industries' arguments and
7 determined that it was so flawed that it had to be vacated.
8 It noted the dilemma and said, the petitioners disagree about
9 the proper remedy, with positions ranging from Minnesota
10 Power's demand that we vacate CAIR with respect to Minnesota,
11 to North Carolina's request that we vacate only the
12 compliance supplement pool of allowances but remand most of
13 CAIR for EPA to make changes to the compliance date, to set
14 the seven included states and the training program.
15 Unfortunately, the Court chose to vacate the rule.

16 Once again, Your Honor, the Clean Air Act has not
17 been sufficient to protect the state, and so we turn again,
18 as we have in this case, to the ancient common law remedy of
19 the public nuisance. Your Honor has already ruled and the
20 Fourth Circuit Court of Appeals has held that we are not
21 prevented by the Clean Air Act; we are not preempted from
22 bringing this claim. This latest decision only reinforces
23 the wisdom of Congress of preserving such claims.

24 Your Honor, TVA will tout its experience, but it
25 will not tell you of the many instances in which it has

1 resisted even the EPA's efforts to get pollution controls in
2 its facilities and that it has installed controls, generally,
3 when it was under legal pressure to do so in settlement of
4 lawsuits. Tennessee, Alabama, and Kentucky have long
5 recognized, Your Honor, that injunction is an appropriate
6 remedy for abating a public nuisance, that you should
7 consider the whole harm and all the benefits in weighing that
8 matter. North Carolina's evidence will show to you that the
9 benefits to the public of relieving them of this harm
10 substantially outweigh the harms.

11 Your Honor, it is a fair and reasonable demand on
12 the part of the State of North Carolina that the air of its
13 territory should not be polluted, that its mountains should
14 not be destroyed or threatened by the acts of TVA and
15 Tennessee, Alabama and Kentucky. North Carolina's proof will
16 show that it is entitled to relief, and in this case, Your
17 Honor, North Carolina needs the help of the Federal District
18 Court in western North Carolina.

19 Thank you.

20 **THE COURT:** All right. Thank you. And I turn to
21 the TVA.

22 **MR. LANCASTER:** Good morning, Your Honor. My name
23 is Frank Lancaster. I'm a lawyer at TVA's Office of General
24 Counsel in Knoxville, Tennessee. With me are three other
25 lawyers from TVA's Office of General Counsel: Maria Gillen,

1 Tom Fine, and Harriet Cooper. Together, the four of us will
2 present the evidence to this Court that will show that the
3 Tennessee Valley Authority is not a public nuisance.

4 The Tennessee Valley Authority is a federal
5 government agency that provides reliable, affordable
6 electricity to nearly 9 million people living in the
7 Tennessee Valley region, and that covers seven states. To do
8 that, the TVA operates a system of electric power generating
9 facilities. Includes nuclear power plants, combustion
10 turbine facilities, hydroelectric dams, the largest
11 wind-generating facility in the Southeast, and eleven
12 coal-fired power plants.

13 The evidence will show that half the electricity in
14 this country is made from coal-fired power plants using
15 America's most abundant fuel that we can obtain right here at
16 home. The evidence will show that all of those coal-fired
17 power plants, all of TVA's, all the plants in North Carolina,
18 emit some amount of pollution, sulfur dioxide, nitrogen
19 dioxide, and mercury included.

20 The three states in which the power plants are
21 located, Kentucky, Alabama, and Tennessee, are well aware of
22 TVA's power plants. They know all about them. They've
23 issued them all permits authorizing them to operate their
24 power plants and setting limits on the amount of pollution.
25 We brought those permits with us. They are very detailed,

1 Your Honor.

2 I apologize for how many exhibit notebooks we have
3 placed in your hands, Your Honor, but these permits are so
4 detailed that they fill two of them. And these permits tell
5 the TVA how it can operate its plants in great detail.

6 The allegation is made in this lawsuit that these
7 permits can just be laid aside and TVA's operations ought to
8 be found to be unreasonable, despite the fact that they are
9 taking place in the way that the State of Alabama, the State
10 of Tennessee, and the State of Kentucky have authorized.

11 The evidence will tell a different story, however,
12 Your Honor. The evidence will show that TVA has made
13 substantial and successful efforts to reduce its emissions
14 and leads the nation in many categories of pollution
15 reduction efforts.

16 There are three pollutants at issue in this case,
17 and I'd would like to talk about them one at a time. The
18 first -- and as the Court hears the evidence, the Court will
19 learn probably the most important pollutant at issue here is
20 sulfur dioxide, and it's also called SO₂ short. Sulfur
21 dioxide in the atmosphere can turn into what is called fine
22 particles, fine particulate matter, and it also has the label
23 PM_{2.5} to designate its size.

24 There is a pollution control for sulfur dioxide
25 called scrubber. A scrubber is a huge device. It's often

1 bigger than the power plant itself. It costs hundreds of
2 millions of dollars to build. It's like building a chemical
3 plant next to your power plant. The evidence will show that
4 seven of TVA's largest power generating units already have
5 these scrubbers that cost them hundreds of millions of
6 dollars, and that an eighth is about to start up in a couple
7 of months, Your Honor.

8 TVA's scrubber program goes back to the 1970s. And
9 it was not in response to settling lawsuits. The evidence
10 will not show TVA has reduced its pollution across the years
11 in settlement of lawsuits. The evidence will show that TVA
12 has been reducing pollution for years, and that at the time
13 this lawsuit was filed, TVA was starting up its seventh
14 scrubber at the same time that the first scrubber in the
15 state of North Carolina was coming on line, nearly 30 years
16 behind TVA's lead.

17 The evidence will show that in this country a third
18 of the generating capacity is equipped with scrubbers, and
19 the evidence will show that a third of TVA's generating
20 capacity is equipped with scrubbers, right on line with the
21 average.

22 In addition to installing these giant scrubbers,
23 another way to reduce pollution emissions is to switch to
24 lower sulfur coal, switch from burning one kind of coal to
25 burning another kind of coal that has less sulfur in it to

1 start with. The evidence will show that TVA has undergone a
2 number of these fuel switches to reduce its emissions of
3 sulfur dioxide by switching to lower sulfur coal. As a
4 result of its activities, TVA has been steadily reducing its
5 sulfur dioxide emissions year after year after year. TVA put
6 giant scrubbers on its Cumberland plant in middle Tennessee
7 in the mid 1990s in response to the acid rain provisions of
8 the Clean Air Act.

9 Mr. Gulick mentioned that utilities like to buy
10 pollution allowances to delay their installation of controls.
11 That's what happened in North Carolina. That's what the
12 North Carolina utilities did. But TVA responded to the Clean
13 Air Act by installing a scrubber, and since the mid 1990s has
14 reduced its emissions of sulfur dioxide from 900,000 tons
15 down to 374,000 tons last year. The evidence will show that
16 TVA expects and intends to continue to reduce its emissions
17 with scrubbers that are under construction right now.

18 Not only has TVA put on pollution controls on its
19 plants and made fuel switches, TVA has shown results, results
20 in the form of emission rates. Emission rates tell one what
21 effect one gets, how much pollution do you make to make one
22 unit of electricity, how many tons of sulfur dioxide do you
23 put out to make a gigawatt hour of electricity, and then
24 measures that tradeoff.

25 The evidence will show that as a result of all its

1 pollution reduction efforts, TVA's emissions rates for sulfur
2 dioxide are far superior to those of the power plants in
3 North Carolina. Over the last three years TVA has made a lot
4 more electricity than Duke Energy and Progress Energy have
5 made here in North Carolina and have made a lot less
6 pollution in the process. The North Carolina power plants
7 have emission rates 25 to 40 percent higher for sulfur
8 dioxide than TVA's power plants. So the TVA will show it has
9 made substantial and successful efforts to reduce its sulfur
10 dioxide emissions.

11 The second kind of pollution at issue in this
12 lawsuit is nitrogen oxide. And like everything you're going
13 to hear in this lawsuit, Your Honor, it also has a shorthand.
14 NOx. NOx is associated with ozone. The NOx emissions
15 combine with other sources to make ozone during the time of
16 year when it's warm and sunny, and that's why ozone season --
17 May to September, is known as ozone season.

18 Like scrubbers, there's a huge pollution control
19 device for NOx, and it's called an SCR. That's short for
20 selective catalytic reduction. They're not quite as big as a
21 scrubber, maybe two-thirds the size of a scrubber, two thirds
22 the cost, but they're still almost as big as the power plant
23 itself. 21 of TVA's 59 units are already equipped with these
24 huge SCRs at a cost of a billion dollars. This includes
25 TVA's Bull Run plant in eastern Tennessee; this includes

1 TVA's Kingston plant, all nine units, in eastern Tennessee.
2 These 21 TVA units that are already equipped with these giant
3 SCRs to control NOx, that's 60 percent of TVA's generating
4 capacity. The evidence from the plaintiff itself will show
5 that one-third of the generating capacity in this country is
6 equipped with SCRs. TVA, at 60 percent, is already nearly
7 twice the national average.

8 There are other ways to reduce NOx emissions as
9 well. There are what are called combustion controls, like
10 low-NOx burners; there are selective non-catalytic reduction,
11 SNCR; and there is low-NOx coal. The evidence will show that
12 TVA uses these methods at all of its plants. The 21 have
13 SCRs, and all the other ones have NOx controls as well.

14 Now, these NOx reduction measures are working, too.
15 It's true that North Carolina's utilities have better
16 year-round, full-year emission rates for NOx than TVA's
17 plants do, but the evidence will show that summertime, ozone
18 season, May to September, is the important time to reduce NOx
19 emissions, and the evidence will show that during that time
20 of the year TVA's rates are essentially equivalent to those
21 of North Carolina's utilities, Duke Energy and Progress
22 Energy, and that if the Court just looks at TVA's Tennessee
23 plants, TVA's performance is better.

24 The third kind of pollution at issue in this case
25 is mercury, and the evidence will show that the best

1 currently known way of reducing mercury emissions is to
2 operate a giant SCR and a giant scrubber together, and they
3 produce what are called co-benefit reductions in mercury.
4 The evidence will show that seven of TVA's plants, all seven
5 with scrubbers, already have SCRs as well, and are producing
6 these co-benefit mercury reductions.

7 In contrast to TVA's approach of study reductions
8 year by year, the evidence will show that power plants in
9 North Carolina have taken a different approach. For example,
10 the evidence will show that since the mid 1990s North
11 Carolina power plants did not reduce their sulfur dioxide
12 emissions at all, not an ounce, until last year. A full
13 decade.

14 Mr. Gulick made reference to a study called
15 Southern Appalachian Mountain Initiative, SAMI. TVA did
16 participate in that. TVA did a lot of work on that study.
17 And what that study is is -- and TVA has actually made the
18 reductions that that study called for. That study was based
19 on 1990s data. Since that time, TVA has made the reductions
20 that SAMI indicated would be helpful to the mountains.
21 During that time, North Carolina's utilities haven't made
22 reductions. That's changing. That's changing because of the
23 North Carolina Clean Smokestacks Act that was passed in 2002,
24 which is a very good law, and it's requiring Duke Energy and
25 Progress Energy to bring their emissions down by 2013 to

1 lower levels, their emissions of sulfur dioxide and NOx.

2 The plaintiff's apparent theory here is that if its
3 utilities reduce their emissions, yet TVA fails to continue
4 with its long trend of reducing its own emissions, North
5 Carolina will not get the benefit of its actions in reducing
6 emissions because TVA's pollution will come in from the west.

7 But the evidence isn't going to show that.

8 In support of its case, the plaintiffs will call an
9 expert witness named Dr. Staudt, and Dr. Staudt has estimated
10 that, absent an injunction from this Court, in the year 2013,
11 TVA will have 450,000 tons of sulfur dioxide emissions on its
12 system. That's almost exactly the number TVA had in 2006.

13 So the plaintiff's case hinges on the Court
14 accepting Dr. Staudt's testimony that TVA will just stop dead
15 in its tracks and cease its long history of making emission
16 reductions and make no more for the six years to 2013. But
17 the evidence will show that TVA has already made some of the
18 emissions reductions that the plaintiff's case says won't be
19 made. Last year, TVA's sulfur dioxide emissions were already
20 down to 374,000 tons, 75,000 tons below the level that
21 Dr. Staudt projects.

22 May I walk to the map, Your Honor?

23 **THE COURT:** Yes.

24 **MR. LANCASTER:** There are more on the way, Your
25 Honor.

1 TVA's Bull Run plant is in eastern Tennessee. It's
2 one of the closest plants to North Carolina of all of TVA's.
3 A scrubber, a giant \$300 million building next to the plant,
4 is under construction. Ron Nash, the man at TVA in charge of
5 that construction, will explain to the Court that it's
6 essentially finished. It's starting up this fall. There
7 isn't any question about it. And it will reduce TVA's
8 emissions from that plant another 30,000 below the level that
9 Dr. Staudt projected.

10 TVA has a plant called Kingston in eastern
11 Tennessee. It has a scrubber under construction as well --
12 actually, two scrubber units - to scrub all nine units at the
13 plant. It's over 60 percent complete right now, Your Honor.
14 It's expected to be on line in less than two years, and it
15 will reduce the emissions from TVA's plant, that plant, by
16 approximately 50,000 tons compared to what plaintiff's
17 witness Dr. Staudt will testify.

18 Another plant that's closest to North Carolina is
19 the John Sevier plant, way up in the corner of northeastern
20 Tennessee. The evidence will show that TVA is kicking off a
21 project right now to install a scrubber at the John Sevier
22 plant and that that be in place before the year 2013, and
23 that that will reduce the emissions from that plant on the
24 order of 30,000 tons-per-year below what plaintiff's case
25 hinges on the Court finding will take place in the year 2013.

1 All three of these eastern Tennessee plants, the
2 ones closest to North Carolina, when these projects are in
3 place will have scrubbers on every single unit, will have
4 SCRs for NOx control on every single unit, and then the
5 combination of those two will have the mercury co-benefit
6 reductions, all three of those plants nearest to North
7 Carolina, at a cost to TVA of approximately one and a half
8 billion dollars.

9 In addition to that, there are many other projects
10 ongoing. The Court will learn that the Johnsonville plant,
11 way over in western Tennessee, is undergoing a fuel switch
12 that will lower its emissions to the tune of
13 40,000 tons-per-year. And the Court will learn that
14 plaintiff's expert Dr. Staudt made a mistake about TVA's
15 Paradise plant and overestimated its emissions by 14,000 tons
16 a year.

17 Your Honor, TVA's employee Mike Scott, who has been
18 in charge of emissions planning at TVA for ten years and
19 under whose watch TVA's emissions dropped over 500,000 tons
20 of sulfur dioxide and over 300,000 tons of NOx, he will
21 testify that Dr. Staudt's estimate is on the order of 200,000
22 tons high. And what that means, Your Honor, is that every
23 witness that follows Dr. Staudt to this witness stand and
24 bases opinions about premature mortalities, about impacts on
25 the forests, about things like that, every one of those

1 witnesses will be relying on testimony from Dr. Staudt about
2 the amount of emissions that's going to take place that will
3 not be supported by the evidence.

4 Your Honor, the plaintiff's case hinges, Your
5 Honor, then, on the idea that TVA will just reverse course
6 and stop reducing its emissions, but our last witness in our
7 case, Your Honor, will be the CEO and president of Tennessee
8 Valley Authority, Tom Kilgore. He will come and take the
9 witness stand and he will tell the Court about TVA's
10 commitment to continue reducing its emissions into the
11 future, just as it has been doing all along.

12 Not only will the evidence show that TVA, Tennessee
13 Valley Authority, has had successful efforts to reduce its
14 emissions and will continue to do so, the evidence will show
15 that the State of North Carolina is not suffering significant
16 harm to its air quality.

17 There is an important thing the Court needs to know
18 about, and it's called air quality standards. Those are set
19 by both the Environmental Protection Agency, the United
20 States EPA, and by the State of North Carolina, and what they
21 are is levels of air pollution that define the difference
22 between good air quality and bad air quality. The evidence
23 will show that the State of North Carolina is meeting these
24 standards just about everywhere in the state and that a few
25 places in the state that are not meeting the standards are

1 expected to meet them soon.

2 The most important one of these standards in this
3 case is the PM2.5. That's the fine particle annual standard.
4 And it is set at 15 micrograms per cubic meter. The evidence
5 will show from the North Carolina Division of Air Quality
6 witnesses that they set that standard at a level that is
7 designed and intended to provide protection of public health
8 in North Carolina, and that if that standard were not good
9 enough, then it would be lowered; it would be lowered to a
10 level that would provide protection for the public health.

11 The evidence from plaintiff's own computer modeling
12 will show that the entire state of North Carolina is expected
13 to be below that standard of 15 in the year 2013, the year
14 that we're focusing on.

15 Even assuming the high levels of emissions that
16 Dr. Staudt projected, without any -- even if TVA didn't
17 continue with its course of reducing emissions, the whole
18 state is supposed to be below that level of 15, in fact, well
19 below it. The entire state is projected by plaintiff's
20 modeling to be below 12, and, in fact, 87 of North Carolina's
21 100 counties are projected to be below ten micrograms, over a
22 third below the level of the standards set by the State of
23 North Carolina itself to protect air quality.

24 And there will be a lot of evidence, Your Honor,
25 that air quality in the state is good. Just last year the

1 North Carolina Department of Environment and Natural
2 Resources proclaimed 2007 to be a banner year for the
3 environment in North Carolina.

4 So we don't expect the evidence to show significant
5 harm to air quality in North Carolina. But if the Court
6 concludes otherwise, the evidence will not show that TVA is
7 the cause of it. The parties both have done extensive
8 computer modeling of emissions, and what that modeling shows
9 is that TVA's emissions, they contribute a very small portion
10 of the pollution in North Carolina, small compared to the
11 amount contributed by North Carolina's power plants, small
12 compared to the amount contributed by other pollution sources
13 in North Carolina, and small compared to the amount that
14 North Carolina sends to her neighbors. And so what that
15 evidence will show, Your Honor, is that TVA is only a small
16 portion of the -- and that's TVA's whole system of the air
17 pollution in North Carolina. When you look at particular
18 plants or state groupings of plants, that's even smaller.
19 None of the evidence will show, for instance, that TVA's two
20 Kentucky plants in far western Kentucky have an adverse
21 impact in North Carolina. In fact, the testimony from North
22 Carolina Division of Air Quality officials will be that the
23 impacts come from the southwest and that TVA's plants far to
24 the northwest aren't as likely to have impacts in North
25 Carolina.

1 I mentioned earlier that there are some counties in
2 North Carolina not meeting the particulate matter standard.
3 Catawba County was one of those, over by Hickory. The
4 evidence will show that right next to Catawba County is a
5 power plant called the Marshall plant, which was emitting
6 100,000 tons a year of sulfur dioxide by itself until it
7 installed its scrubbers just recently, and that as soon as
8 its scrubbers were installed, the State of North Carolina
9 found that Catawba County was no longer failing to meet the
10 air quality standard.

11 The evidence will show that the State of North
12 Carolina tasked one of its scientists to examine certain high
13 readings on pollution monitors to determine what states
14 contributed to them, and the evidence will show that after he
15 did something called back-trajectory modeling, he concluded,
16 quote, North Carolina is the major culprit, unquote.

17 The evidence will show that that's not surprising
18 because everyone agrees that pollution from nearby has more
19 of an impact than pollution from further away. Pollution
20 from North Carolina power plants has more of an impact in
21 North Carolina than pollution from TVA's far-away plants in
22 Memphis or Kentucky.

23 In conclusion, Your Honor, there is inevitably
24 going to be a lot of technical evidence in this case, but
25 what that evidence is going to show is that TVA provides a

1 vital commodity, reliable affordable power to 9 million
2 people; that TVA has responded to federal pollution reduction
3 requirements by making early and continuous reductions; that
4 TVA has spent billions of dollars making those pollution
5 reductions; that TVA's emission rates are as good as and in
6 some cases better than those of other utilities; that TVA
7 will continue with its program to install pollution controls,
8 and particularly at the three eastern Tennessee plants that
9 are closest to North Carolina.

10 The evidence will show that North Carolina's air
11 quality is good and not a danger to the people of North
12 Carolina, that TVA's emissions make up such a small part of
13 it that the best way for North Carolina's air quality to get
14 even better is for North Carolina to continue to make
15 reductions right here at home, just like TVA is continuing to
16 do, not by pointing the finger at TVA.

17 Thank you, Your Honor.

18 **THE COURT:** All right. Thank you.

19 Then we are ready to proceed with evidence, so call
20 your --

21 **MR. GULICK:** We're ready to call our first witness,
22 Your Honor.

23 **THE COURT:** Yes.

24 **MR. GULICK:** Mr. Brock Nicholson.

25 **MR. LANCASTER:** Your Honor, may I ask a question

1 before the testimony starts?

THE COURT: Sure.

3 **MR. LANCASTER:** We had filed a number of motions in
4 limine that had not been acted on. Should we assume that we
5 should simply raise those matters at the time they arise
6 during the testimony?

7 **THE COURT:** Right. I felt that it wasn't necessary
8 to rule on motions in limine prior to the trial. They can be
9 handled as well or better when the witness takes the stand.
10 And you gentlemen will have ample opportunity to present your
11 witness and to lay your foundation for determination by the
12 Court that we're dealing with an expert, and then I'll hear
13 cross-examination --

14 **MR. LANCASTER:** Thank you, Your Honor. I just
15 wanted clarity on that.

THE COURT: All right. Come around and be sworn.

17 | BROCK NICHOLSON,

18 being duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

20 BY MR. GULICK:

21 | Q. Would you state your full name, please.

22 | A. Brock McFall Nicholson.

23 Q. Where do you live, Mr. Nicholson?

24 A. Live in Clayton, North Carolina.

25 Q. What is your higher educational background?

1 **A.** Bachelors degree in mechanical engineering.

2 **Q.** Are you a professional engineer?

3 **A.** I am, registered in the State of North Carolina.

4 **Q.** Would you please state your employment background,
5 starting from the time that you graduated from NC State
6 University.

7 **A.** I graduated in 1966, and then, for the following year, I
8 remained at the university as a research engineer in the
9 Department of Biological and Agricultural Engineering.

10 And then I went on active duty with the U.S. Army. That
11 lasted for four years. And during that time I was in the
12 Corps of Engineers. But then I flew in the Army and spent a
13 year in Vietnam, and then came back and was a flight test
14 engineer with the Army for the last year on active duty.

15 **Q.** When you left the Army, where did you then work?

16 **A.** I came to work for the air quality program in North
17 Carolina in August of 1971.

18 **Q.** And how long did you stay -- when you were there, what
19 were you doing in that capacity?

20 **A.** I was doing engineering work and then helped develop the
21 permit program in 1972 for the State, and then I remained
22 until the fall of '72, which at that time I was the called
23 the chief engineer in the organization at that time. Then I
24 accepted an appointment as a commissioned officer in the
25 United States Public Health Service.

1 **Q.** What year was that? What year did you accept --

2 **A.** In the fall of 1978.

3 **Q.** And then -- and how long did you work for the Public
4 Health Service and what were you doing?

5 **A.** I was detailed from the U.S. Public Health Service to
6 the United States Environmental Protection Agency, the Office
7 of Air Quality Planning and Standards. That's the national
8 headquarters office for the air program in EPA.

9 I was there until 1992, when I was detailed again back
10 to the State of North Carolina Air Quality Program, and I was
11 in that detail for three and a half years, and at that time
12 retired from the Public Health Service and remained on with
13 the state.

14 **Q.** You continued on with the state, did you say?

15 **A.** I did.

16 **Q.** Are you still employed by the State of North Carolina
17 Division of Air Quality?

18 **A.** I am.

19 **Q.** What is your current position in the Division of Air
20 Quality?

21 **A.** I'm the deputy director of the division, state Division
22 of Air Quality.

23 **Q.** In your work area, in this history, what did you focus
24 on; what has been your principal area of concentration?

25 **A.** Principally, it's been on the planning side of the

1 house, from the first state agency, developing rules and
2 program for permitting, and also at USEPA, where I was head
3 of the Ozone Policy Section within the Office of Air Quality
4 Planning and Standards, and then, upon return to the state
5 program, I was chief of the Air Quality Planning Section
6 until assuming the role of deputy director in 2003.

7 **Q.** In your position, do you work with air quality modeling?

8 **A.** I work with it in the sense of overall supervision of
9 that process, not as a hands-on technical detail, but
10 certainly in the role of how and when to apply modeling and
11 to understand the results of modeling.

12 **Q.** Does that also include understanding the inputs in
13 modeling?

14 **A.** That is correct, the inputs and so forth.

15 **Q.** What are your main responsibilities as deputy director
16 of the division?

17 **A.** Well as deputy, certainly support and assist the
18 director of the division in all aspects of the program, but
19 with a focus on the planning side of the house at the
20 regulation development, legislation development, and planning
21 programs.

22 **Q.** How long have you been deputy director?

23 **A.** Since 2002.

24 **Q.** Are you familiar with something known as the Southern
25 Appalachian Mountains Initiative?

1 **A.** I am.

2 **Q.** Is that known as SAMI, S-A-M-I, for short?

3 **A.** It is.

4 **Q.** Was the State of North Carolina involved in SAMI?

5 **A.** Very much so.

6 **Q.** Were you personally involved in it?

7 **A.** I was personally involved.

8 **Q.** Pardon me.

9 I'll get the hang of this microphone in a moment.

10 What was your role -- when did you begin your
11 involvement of SAMI?

12 **A.** In late 1992.

13 **Q.** And how long did SAMI -- did SAMI's process end at some
14 time?

15 **A.** In 2002. It was essentially a ten-year program.

16 **Q.** Were you involved throughout that entire period?

17 **A.** I was.

18 **Q.** What was your role or roles in the SAMI process while
19 you were involved with it?

20 **A.** I was the co-chair of the policy committee, helping
21 guide the direction of SAMI and how it was to be conducted.

22 **Q.** Were there other groups in addition to the policy work
23 group?

24 **A.** There were. There was a technical work group and then a
25 public advisory group.

1 **Q.** Did SAMI issue a final report?

2 **A.** It did.

3 **Q.** Were you involved in the development of that final
4 report?

5 **A.** I was, in an oversight and supervisory sense.

6 **Q.** I'd like to show you Plaintiff's Exhibit No. 1 and ask
7 if you can identify what that is.

8 **A.** That is the cover on the final report issued in August
9 of 2002.

10 **Q.** And I'd like to also show you -- was there an executive
11 summary that was also published at the same time.

12 **A.** There was.

13 **Q.** Like to show you Plaintiff's Exhibit No. 2 and ask
14 you --

15 **A.** And that is the executive summary.

16 **Q.** It's also called a final report summary.

17 **A.** Correct. Dated August, 2002.

18 **Q.** I'd like to direct your attention to Exhibit 1, page 2,
19 and ask if you can -- what is this page? Tell us about it.

20 **A.** On this page it lists the governing body that guided the
21 SAMI work and a number of organizations that were involved in
22 it.

23 Under the governing body, the eight states that were the
24 leaders in the project are listed here.

25 **Q.** Now, do we see a large amount -- a list of the governing

1 body on the monitor?

2 **A.** Yes.

3 **Q.** And who -- what did the governing body largely consist
4 of?

5 **A.** These were secretaries, or in some cases labeled as
6 directors or commissioners, of the departments in the various
7 eight states that guided the conduct of the SAMI project.

8 **Q.** And did that include the North Carolina Department of
9 National Resources?

10 **A.** It did.

11 **Q.** Environment and Natural Resources.

12 Did it also include -- were there others involved other
13 than representatives of these eight states?

14 **A.** There were. This was -- the voting members of the
15 governing body were the eight-state commissioners or
16 secretaries, but we did have ex-officio members on governing
17 body, as you can see listed, the USEPA Region 3, USEPA Region
18 4, superintendent of the Blue Ridge Parkway, U.S. Forest
19 supervisor for the southeast region, the Southern Company
20 principal scientist, and the Environmental Defense air
21 quality specialist, and these were on the governing body as
22 principal advisers, if you would, to the voting members of
23 the governing body.

24 **Q.** Does this page also talk about who the participants are
25 or identify them?

1 **A.** It does. There's an extensive list of those entities
2 that were participants in the SAMI project through the years,
3 including power companies, environmental groups, academia,
4 and other industry, and public -- members of the public.

5 **Q.** Was the Tennessee Valley Authority one of the
6 organizations that participated?

7 **A.** It is listed and they did participate throughout the
8 course of the project.

9 **Q.** Is that shown over in the right-hand column?

10 **A.** It is. It's highlighted.

11 **Q.** Like to direct your attention to Exhibit 1, page 3. And
12 ask you what this shows at the bottom.

13 **A.** This lists the numerous contracts involved in the
14 project. Most of the technical work was actually done under
15 contract with specialists, contractors involved, and this
16 lists the numerous contractors.

17 **Q.** Was the Tennessee Valley Authority one of those
18 contractors?

19 **A.** They were.

20 **Q.** Mr. Nicholson, could you tell us why SAMI was created?

21 **A.** SAMI was created because of a concern about the
22 deteriorating air quality values in the Southern
23 Appalachians. It had been noted in the early '90s that
24 visibility was degrading, acidification of the terrain and
25 streams was occurring and there was ozone damage to

1 vegetation; and at the same time, there were a number of
2 permit applications being made and there was concern by the
3 permitting authorities that these permits may cause adverse
4 effects in the Southern Appalachians and it was felt that
5 there needed to be a cooperative study to understand what
6 impacts there would be from these sources and, perhaps, what
7 could be done in terms of emissions reductions and what
8 impact those reductions would have on air quality related
9 values in the region because of the mounting concerns at that
10 time.

11 Q. Did the semi-final report have a mission statement?

12 A. It did.

13 Q. I'd like to direct your attention to Exhibit 1, page 10,
14 in the middle left that's now shown on your screen; and is
15 that a mission statement there?

16 A. Yes.

17 **MR. GULICK:** Gary, I believe it's on the left-hand
18 side.

19 **MS. COOPER:** Your Honor, we'd like to object on
20 grounds of hearsay.

21 **MR. GULICK:** Your Honor, we have an authenticated
22 copy of this report from the State of North Carolina. It
23 documents a long history of study that was done by the State
24 of North Carolina in conjunction with other states and many
25 others. The document is authenticated by the document which

1 North Carolina participated. It is an official public record
2 of the State of North Carolina, among others.

3 **THE COURT:** All right. Give me a minute.

4 **MR. GULICK:** Mr. Brock Nicholson is well qualified
5 to testify about this, and the report will be -- I also
6 believe that the Tennessee Valley Authority did not note an
7 objection.

8 **MS. COOPER:** To the contrary, Your Honor; we did
9 object on grounds of hearsay.

10 **MR. GULICK:** Our mistake. Sorry.

11 **THE COURT:** I'm sorry. I'm having trouble hearing.

12 **MS. COOPER:** Your Honor, I just wanted to note, in
13 response to what Mr. Gulick said, that TVA did, in fact,
14 object to this.

15 **MR. GULICK:** I stand corrected, Your Honor. We
16 just discovered that. So I was mistaken that they had not
17 objected.

18 Nonetheless, Your Honor, this is an extremely
19 relevant document, it is a public record, and we believe that
20 it should be --

21 **THE COURT:** I am looking for the page here. You're
22 on --

23 **MR. GULICK:** Excuse me, Your Honor. I'm on page --
24 Your Honor, I apologize. Because of the electronic
25 documents, it has page numbers that are different. It's

1 actually page 1.1 of the Chapter 1 if you're looking at the
2 hard copy. I apologize.

3 **THE COURT:** You're on page 1.1 in my notebook?

4 **MR. GULICK:** Of Exhibit 1.

5 **THE COURT:** I'm in Exhibit 1.

6 Okay. I see it.

7 **MR. GULICK:** Your Honor, I apologize. We have this
8 electronic document, and the electronic document's page
9 number is not always the same as the document page number. I
10 will try to, as I'm proceeding ahead, to give you both page
11 numbers at the same time.

12 **THE COURT:** Yes. I have it.

13 **MR. GULICK:** That's the reason for the different
14 page number, Your Honor. I'll try to give you both.

15 **THE COURT:** I'm on -- I'm with you now as to your
16 exhibit. Now, let me take a look at it right here.

17 **MS. COOPER:** Your Honor, I'd like to note that SAMI
18 itself is not the State of North Carolina. It's, as he says,
19 a voluntary organization of a number of states, and there
20 were many, many, many participants. It's hard to understand
21 how it could be an official public record of the State of
22 North Carolina.

23 **THE COURT:** It does include the State of North
24 Carolina, if I'm reading it correctly, and includes this
25 mountain area here in western North Carolina.

1 Show the objection overruled. Give the defendant
2 an exception.

3 All right.

4 **BY MR. GULICK:**

5 **Q.** Mr. Nicholson, I believe I was trying to direct your
6 attention to the mission statement. Can you tell us what it
7 is?

8 **A.** Well, in essence, what it says is that these eight
9 states and the other members of the project will come
10 together in a cooperative way and identify and make
11 recommendations on reasonable measures to address the
12 existing and any future adverse effects from human-induced
13 air pollution on air quality related values in the Southern
14 Appalachians, and particularly focus on the Class 1 areas
15 across that whole region, and then considering both the
16 environmental and socioeconomic implications of these
17 recommendations.

18 **Q.** On the same page, is the map of the SAMI area of concern
19 identified?

20 **A.** Yes, it is.

21 **Q.** And is that now on the screen in front of you?

22 **A.** Yes. And in this map, it shows the eight states that
23 cooperatively participated in a voluntary way in SAMI, and it
24 also shows the particular highlighted or colored region of
25 the Southern Appalachians and the locations and identity of

1 the Class 1 areas of which we focused our attention.

2 Q. Are any of those -- these Class 1 areas, are these the
3 ones that are identified by dark black print?

4 A. They are. And the associated dot indicates the Great
5 Smokies or Shenandoah Valley area, the colored area.

6 Q. Are any of those Class 1 areas located in whole or in
7 part in North Carolina?

8 A. There are. There are four in western North Carolina:
9 Linville Gorge, Shining Rock, Joyce-Kilmer-Slickrock, as well
10 as the Great Smoky Mountains National Park.

11 Q. How much of the Great Smoky Mountain National Park is
12 located in North Carolina?

13 A. A little more than -- approximately a little more than
14 half of the park area is in North Carolina.

15 Q. You mention air quality-related values. What were the
16 air quality-related values that SAMI was addressing?

17 A. There were several, particularly visibility impairment
18 or ability to see, and acidification of streams and land, as
19 well as the effects on forest land from ozone exposure.

20 Q. Was SAMI addressing human health concerns?

21 A. Not directly. It was really based on what we call
22 welfare-related values, those associated with those air
23 quality-related values.

24 Q. Will you tell the Court what a Class 1 area -- using
25 that term, what is a Class 1 area?

1 **A.** Class 1 areas are those areas that are felt to be
2 particularly in need of protection. They're generally
3 pristine areas, and by definition of the Clean Air Act, I
4 believe it would be the amendments of 1977, identified as
5 national parks of a certain size and greater, I believe 5 or
6 6,000 acres of forest land, or wilderness areas of a certain
7 size and greater.

8 **Q.** I'd like you now to explain the background process --
9 pardon me. I'm getting too close -- the background process
10 that SAMI used, and I'd like to direct your attention to
11 Exhibit 2, page 5.

12 **MR. GULICK:** If you could show that on the screen.

13 This is the, Your Honor, the smaller, the second
14 report summary. And if you will go to page -- it actually is
15 page 5 of the executive summary, Your Honor. Those pages are
16 the same as on your electronic document.

17 **THE COURT:** All right. On page 5.

18 **BY MR. GULICK:**

19 **Q.** Page 5 of the final summary, would it help you to
20 explain the process by which SAMI is using in an overview
21 way?

22 **A.** Okay. In a very overview, it's a body of integrated
23 assessment where we look at each of these air quality-related
24 values or the effects of them in one analysis, if you would,
25 and in that analysis, we are looking at ozone and the

1 formation of ozone, which is formed from, as you heard
2 earlier, nitrogen oxides, or NO_x, plus what we call volatile
3 organic compounds, and ozone is formed. But then for the
4 acid deposition, effects on streams and soils, it's sulfur
5 dioxide, plus nitrogen oxide, again, and water equals various
6 acids, sulfuric acid and nitric acid. And then fine
7 particles, which is associated with visibility impairment,
8 and, again, sulfates and nitrates, again coming from sulfur
9 dioxide and nitrogen oxides and ammonia and organic -- and
10 soil dust.

11 And those are done in an integrated way, where we
12 employed, for one of the first times, what's called a one
13 atmospheric model, where we conceptually take emissions from
14 the various sources as a starting point and employ through a
15 computer model which accounts for meteorology, chemistry, as
16 well as the emissions, and then that model will predict a
17 result in a downwind area, and then the output from that
18 model can go into what we call effects models, so you can
19 really understand the change in the forests or trees that
20 would be affected by the ozone or the acidification of
21 streams or soil and, in fact, also visibility impairment.

22 Or if we're going to change the inventory in the
23 model -- which is part of the technique, is to vary the
24 inventory once the model is established, then you can see the
25 benefit of certain control strategies and improving those

1 concerns, if you would, improving visibility, reducing
2 acidification or improvements to the forest.

3 **Q.** You mentioned something about emissions inventory.

4 Would you tell the Court a little bit about what's entailed
5 and what are you looking at in emissions inventory?

6 **A.** Emissions inventory is kind of the starting point for
7 any of these kinds of analyses. It's the fundamental
8 foundation of understanding. In other words, given the
9 pollutants that I talked about are crucial in the analysis,
10 we need to understand what sources emit these pollutants and
11 where those sources are and in what quantities. So we
12 compile what we call a base inventory to fundamentally
13 understand what the emissions are out there.

14 And I might note here that some of the emissions I
15 mentioned are secondarily formed in the atmosphere into
16 sulfates or nitrates or ozone, but they stem from the
17 precursor pollutants of sulfur dioxide or nitrogen oxides
18 that I had mentioned earlier.

19 So with that inventory, we can then build the process of
20 understanding the model and then relate different strategies
21 to that base inventory.

22 **Q.** In a general way, tell us a little bit about what the
23 strategies are you're talking about.

24 **A.** Strategies are fundamentally taking the base inventory
25 to a future year by growth factors, growth and emissions due

1 to population increase or vehicle miles traveled or vehicle
2 use increases associated with the population increase, or
3 demand of electricity from a power plant, for example, and
4 then when you have that future year inventory, you can look
5 at strategies by reducing the future year inventory by
6 various amounts.

7 And we had two techniques that we employed in SAMI. One
8 was to do it in a sensitivity context where it may not be
9 particularly associated with actual control put on equipment,
10 but the percentage change of inventory, to understand how the
11 atmosphere and the system will respond to a particular
12 strategy. And I believe we'll explain that a little more
13 later.

14 But then other are specific strategies where we go in
15 and look at what's reasonable from a cost standpoint. And
16 one of the concepts we employed at SAMI is to stress the
17 system in the sense of a moderate strategy or a mild strategy
18 in terms of emissions reduction in the future, all the way
19 out to a fairly significant reduction to sort of stress the
20 system and understand what the benefits would be across that
21 spectrum of different strategies on, for example, forest
22 health or acidification or visibility improvement.

23 **Q.** Did SAMI study the cost of control?

24 **A.** It did. As part of the analysis, there was an
25 assessment of cost. And this is important because, in

1 defining our strategies, one of our future strategies, to
2 look at source category by source category, was to pick those
3 strategies that would be maybe less of a cost consideration
4 to a more extreme strategy, where we would need to understand
5 economic impacts of such a strategy in conjunction with
6 looking at the benefits of that strategy.

7 **Q.** Did SAMI undertake any socioeconomic assessment?

8 **A.** It did. In SAMI, we wanted to understand what the
9 public felt like they -- what value they associated with
10 these improvements, and two particular -- well, there are
11 several areas we looked at. One was the value of what we
12 call residential visibility, if you would. In other words, a
13 resident of this region, for example, what would they value
14 in dollars in terms of -- or what would they be willing to
15 pay, I guess is another way of saying it, for visibility
16 improvement associated with our range of strategies.

17 Now, another one was recreational visibility
18 improvement, where a visitor to our area, a tourist, values
19 the ability to see a vista from, for example, the Blue Ridge
20 Parkway or one of our Class 1 areas, what value do they
21 associate with that, and there was, through a process of
22 meetings and interviews with the public, they established a
23 range of values for these strategies, what they would be
24 willing to pay.

25 **Q.** Let's return to the subject of the inventory. And I'd

1 like to direct your attention to Exhibit 1.

2 **MR. GULICK:** It's the electronic page 19. If
3 you'll bear with me, Your Honor, I will give you the page
4 number -- or docket number. I believe that's page 26 -- 2.6,
5 Your Honor, in Exhibit 1.

6 **THE COURT:** Okay.

7 **BY MR. GULICK:**

8 **Q.** Mr. Nicholson, could you just, in a general way, tell us
9 what this page has on it, what this table is.

10 **A.** This is a summary table of the emissions inventory. And
11 on one axis we have, going down the side, various pollutants.
12 It's grouped by pollutants that we talked about earlier.
13 Volatile organic compounds, for example, has been highlighted
14 here. And then further down the left side it's divided by
15 type of source.

16 It's important when talking about strategies to identify
17 types of sources, and also they're handled perhaps
18 differently in the air quality models.

19 **Q.** Briefly, what are the sources, different types of
20 sources?

21 **A.** The types of sources -- and it's a fairly standard way
22 of dividing it in these type of analyses. We have utility
23 sources, which are important from an nitrogen oxide/sulfur
24 dioxide standpoint because they tend to have taller stacks;
25 and we have industrial point sources, meaning they're

1 combustion sources, depending on the pollutant; and it may be
2 other types of sources, generally characterized as industrial
3 boilers or industrial processes, but not electric generating
4 units.

5 And then in the transportation sector, we have highway
6 vehicles, highway mobile, and then non-road, and those are
7 generally calculated through specialized emissions inventory
8 models that are produced primarily by USEPA where we can
9 calculate emissions associated with highway vehicles, trucks
10 and cars and so forth, as well as off-road equipment, be it
11 construction or agricultural.

12 Q. Is that what "non-road" means?

13 A. That's what "non-road" means.

14 And then "area source" generally means any other source
15 that doesn't have a particular identifiable emission point or
16 stack to it. Area sources might be homes, emissions from
17 homes or other commercial institutions and facilities that
18 also emit.

19 So we have a sense of the total emissions inventory by
20 pollutants across these various sectors, and we feel like
21 we've covered the complete emissions inventory for man-made
22 emissions in the region. And this is a summary for all eight
23 states. And then it's a rate across, from left to right, by
24 years that we project out to the future and by strategies.

25 Q. And in the various figures under these, in these columns

1 below the years, when you talk about the strategies, is this
2 where you have A1, A2, B1, B2? Is that the strategies?

3 **A.** That's the way we identified the spectrum or range of
4 strategies that were analyzed in the process, A strategies
5 generally being what we figure either it's already on the
6 books in terms of regulatory programs for these categories or
7 very certain that it will be on the books. Perhaps an
8 example for A2 is that it included the Federal Tailpipe
9 Program, that's typically called Tier 2, Tailpipe Program
10 adopted by USEPA, as well as the NOx SIP Call, NOx
11 regulations for utilities and other major stationary sources.

12 **Q.** You said those were included in what's called the --

13 **A.** In the A2. A2. We sort of had a shorthand for A1 and
14 A2. A1 is on the books, in other words, already definitely
15 set in regulation or statute, and then A2 is on the way.
16 It's A1 plus some other expected regulations that are very
17 high degree of certainty that they will be applied. And an
18 example here when we did this in the early -- number of years
19 ago was, again, the Federal Tailpipe Program for automobiles,
20 and the NOx SIP limitations for power plants and other large
21 combustion sources.

22 **Q.** NOx is oxygen nitride; is that correct?

23 **A.** Nitrogen oxide --

24 **Q.** Nitrogen oxide. Is that right?

25 **A.** Correct.

1 **Q.** And SIP. Explain what SIP is.

2 **A.** SIP, State Implementation Plan.

3 We do use a lot of acronyms.

4 **Q.** Now, when you talked about these A strategies, if you
5 will, what are the -- there's B1, B2 and B3. What are those?

6 **A.** Well, as I briefly mentioned earlier, as part of the
7 process, we wanted to understand the relative benefit in
8 terms of improvements in air quality-related values by
9 applying strategies to the sources, and strategies, of
10 course, reduce emissions fundamentally. That's the variable
11 that we're changing. And this table just sort of summarizes
12 how the emissions for the sectors from each of the various
13 pollutants change as we go from sort of a mild strategy, B1,
14 out to a more stringent strategy, B3. And then we did that
15 for each of two future years, and those years are 2010 and
16 2040, as our future projection years that we wanted to
17 understand the benefits of.

18 **Q.** Now, with respect to the various pollutants involved,
19 are electric generating utilities particularly connected, if
20 you will, or related to emission of particular pollutants?

21 **A.** They are. Nitrogen oxide emissions, especially, are
22 significant emission from combustion sources, and it comes
23 from two sources, one, atmospheric nitrogen in the combustion
24 process, and the other one, coal, especially, does have
25 inherent in it some nitrogen content. So you'd have NOx

1 produced when you combust the coal.

2 And then SO₂ is another significant emission point from
3 coal-fired utility boilers because of the sulfur content in
4 the fuel, so you would have sulfur dioxide emitted.

5 Q. I'd like to direct your attention to the panel on this
6 page, at the bottom of the page, dealing with sulfur dioxide
7 emissions.

8 **MR. GULICK:** And if you could highlight that, Gary.
9 If you could highlight the panel dealing with sulfur dioxide
10 emissions and bring that up so we can look at that more
11 closely.

12 **BY MR. GULICK:**

13 Q. You had indicated that utilities emit the sulfur
14 dioxide. Could you explain a little bit about the various
15 sectors and how much of sulfur dioxide they emit?

16 A. Well, as you can see here, given the quantity of fuel
17 burned in the utilities sector, as summarized in this table,
18 we're looking at over -- these are thousands of tons per
19 year, so we're talking about 4.7 million tons per year in the
20 base consideration without a control strategy applied for the
21 utilities sector, versus under a million tons for the total
22 of the industrial sector in all eight states, that being
23 under 700,000.

24 By contrast, the highway mobile is only 33,000 tons and
25 non-road, 121, and area source totaling less than

1 500,000 tons, for a total of 6 million. So we're talking
2 about 4.7 out of 6 million tons of sulfur dioxide utilities
3 sector.

4 Q. Now, as I'm looking at this, could you sort of explain
5 what's happening with sulfur dioxide and the various
6 strategies that you were talking about?

7 A. Okay. As we -- as I mentioned earlier, particularly in
8 the A2 strategy, it does also contain the NOx SIP call in
9 that strategy. So we do see a reduction -- well, that's NOx.
10 But we do see reductions in SO₂, primarily the Title IV, the
11 acid rain provisions of the Clean Air Act, and certainly --

12 Q. Is that the third column from the left?

13 A. Yes, it is.

14 Q. Okay.

15 A. And when we get into the B strategies, we do apply
16 additional controls, but it certainly may reflect our best
17 estimate of other controls that have been put on in terms of
18 scrubbers or other techniques that were applied or would be
19 applied in this time frame.

20 Q. In looking at the B strategies in comparison to the A2
21 strategy, which is now highlighted on your screen, could you
22 explain what's going on here and what the strategies actually
23 are reflecting with respect to utilities and also the other
24 sectors?

25 A. Well, certainly, by 2010, in the utility sector, we're

1 reflecting a greater and greater degree of control across the
2 B strategies, as you can see a considerable degree of control
3 when we get to B3 by 2010. And then, as you can see in the
4 highway mobile, for example, that's gone down considerably
5 due to the Federal Highway Tailpipe Program and low-sulfur
6 fuel standard for gasoline, primarily, and certainly see that
7 it reduces. There is actually a subsequent table that will
8 actually list the strategies we employed in the -- in
9 constructing these inventories.

10 Q. How does the reduction strategy for utilities compare to
11 that for industrial sources?

12 A. Well, it is considerably more stringent. I think once
13 we understood the cost of control in these strategies, we
14 realized that it was much more cost effective to reduce the
15 utility emissions in these strategies than the industrial
16 point emissions. And this summary table of total tons across
17 the eight states does reflect that realization, and we went
18 through a process to determine those strategies through
19 sector work groups. In other words, we had representatives
20 from each of the industry sectors to participate in the
21 process of determining what would make sense from a strategy
22 selection, candidate strategy selection process.

23 Q. Is there a SAMI graph somewhere that shows the relative
24 costs that you just talked about?

25 A. There is.

1 Q. I'd like to direct your attention to Exhibit 1,
2 electronic page 122, figure 7.8.

3 **MR. GULICK:** And, Your Honor, if you go to page
4 7.11, Chapter 7. It's also going to be showing on your
5 screen. It's figure 7.8 on that page.

6 **BY MR. GULICK:**

7 Q. Can you tell us what's shown on Figure 7.8?

8 A. What we have in this figure illustrated graphically is
9 the cost-per-ton, which is a parameter that's quite often
10 used, sometimes referred to cost effectiveness of a strategy.
11 So it's in dollars-per-ton of pollutant removed. And we have
12 it illustrated for the B1, B2, B3 strategies, and it compares
13 the dollars-per-ton cost for each of the emissions inventory
14 sectors that we saw on the last chart that's sort of an
15 orange color, the relative cost effectiveness of applying the
16 B1, B2, B3 strategy in 2010 to that sector. And we're
17 talking about somewhere on the order of a thousand or little
18 bit more, in B1, dollars-per-ton; B2, perhaps a little less
19 than a thousand; then more than a thousand --

20 Q. That's for what sector?

21 A. That's for the utility sector. And then in each of the
22 sets across here, we can compare that to the blue column, for
23 example, the industrial sector, and here we can see that
24 we're at 6 or more thousand dollars-per-ton of SO₂ removed in
25 2010 by that strategy, a little bit less per ton in the B2

1 and B3. And these are all as compared to the "On the Way,"
2 A2 strategy.

3 So it's a way of understanding incrementally what it
4 would cost to apply that level of control to each of the
5 categories as we go across the spectrum of strategies under
6 consideration.

7 So one might observe that instead of about a thousand
8 dollars per ton, we're talking about six times more higher
9 cost to remove a ton of SO₂ from an industrial boiler under
10 the B1 strategy than it would be for utilities.

11 Q. On that same page, in the top left-hand corner, did SAMI
12 provide a written explanation of this graph?

13 A. Yes.

14 Q. It's now being shown on your screen at the top left-hand
15 corner.

16 A. And here we sort of summarize in text form that the cost
17 per ton of SO₂ removed in the industrial sector is five to
18 six times greater than in the utility sector.

19 Industrial sector costs are higher than utility due to
20 negative economies of scale involved with smaller industrial
21 boilers, and I think also, not stated here, but retrofit
22 technology is on the wide range of configurations for that
23 category.

24 But when we had the utility boiler with considerably
25 more emissions, we do have the advantage, and the SAMI study

1 observed this, that it's much more cost effective on a scale
2 basis to reduce those emissions on a dollars-per-ton basis.

3 **Q.** So going back to the question of your strategies, is
4 there -- what's the relationship of this to the strategies
5 that you developed for the utilities versus the industrial
6 sector?

7 **A.** Well, again, when we went through the process, the
8 sector-by-sector work groups, to lay out the spectrum of
9 strategies, cost did play a factor in assigning or
10 identifying mechanical strategy to test in the project, and
11 these -- this was inherent in that selection of the
12 strategies that are unique to each of the source categories.

13 **Q.** Let's turn now to the question of modeling. Back when
14 you were talking about modeling, you talked about geographic
15 sensitivities. Would you explain again what that entails or
16 what was involved with that?

17 **A.** We have -- in the eight SAMI state region, we wanted to
18 understand, given it's a pretty broad region, the benefits or
19 effects of controlling emissions of sulfur dioxide and
20 nitrogen oxides selectively in various portions of that
21 region, and we chose state-by-state reductions to be made and
22 then understand what the relative benefits of that reduction
23 is in one state, on that state and all of the other states.

24 So we did that across a series of days that were
25 modeled. I briefly mentioned meteorological inputs in the

1 model. Of course, meteorology, wind and temperature and
2 various conditions affect the results through the air quality
3 model, so we actually did this for a whole series of
4 different meteorological days in the model.

5 Q. I'd like to draw your attention now to Plaintiff's
6 Exhibit 3 and ask you if you can identify what this is.

7 A. This is a plot depicting the results of our -- or one of
8 the days that we model in the geographic sensitivity
9 analysis.

10 Q. And you indicated there were a series of these?

11 A. There were. There were a number of different days. We
12 wanted to understand the effects of different weather systems
13 or meteorological days on the results.

14 Q. And are these plots that were actually performed by SAMI
15 that was -- are these the ones that were performed?

16 A. It is. This is one of the plots.

17 Q. And this exhibit consists actually of 28 pages. I would
18 like to direct your attention to the very last one, which is
19 page -- electronic page 28.

20 **MR. GULICK:** Your Honor, if you're looking at the
21 hard copy, it should be the very last page.

22 **BY MR. GULICK:**

23 Q. And looking at this page, Mr. Nicholson, could you tell
24 us, first of all, in a general way what this page is showing?

25 A. This is a plot -- these are plots. We call them

1 difference plots. And the way we conduct the sensitivity
2 analysis I mentioned, state by state, is to make a reduction
3 in the emissions inventory.

4 Again, the way we do the studies is the variable in the
5 whole process is the emissions inventory. So with a
6 10 percent reduction in the sulfur dioxide emissions on a
7 state-by-state basis, we can then see the resulting change in
8 sulfate. Again, sulfate is a product secondarily formed in
9 the atmosphere in what would end up as an impact in an area.

10 So, very briefly, the left column center is the
11 beginning situation on that day of air quality, and, from
12 that, we make the 10 percent change.

13 Q. Is that what's highlighted now on the screen in front of
14 you?

15 A. Correct.

16 Q. And the large --

17 A. And, again, I should emphasize, this was for 2010. It's
18 one of our prediction. It's called "On the Way" here.
19 Really, it's the A2 strategy, as we explained earlier. So it
20 doesn't have any of the subsequent more stringent reductions
21 in it, but it was figured as kind of a standard baseline from
22 which we make changes.

23 Q. Now, on this -- on that one -- if you could put that one
24 back up. It has a table on the -- excuse me. There is a --
25 on the left, very left-hand side, there is a list of numbers

1 and color-coded chart.

2 **A.** Right.

3 **Q.** And could you explain what that is?

4 **A.** It's a scale in micrograms per cubic meter that one
5 would associate the color with.

6 **Q.** And just briefly, what is the -- what do those colors
7 signify?

8 **A.** Well, it gives a change in values associated with
9 modeling on that day of "On the Way," and from blue, you can
10 see we're talking about perhaps a blue range of 5 up to 20 in
11 terms of the red, that strategy impact on the area.

12 **Q.** Now, is that the change, or was this one the --

13 **A.** Absolutely. This is what we predict on that day.

14 Excuse me.

15 **Q.** Okay.

16 **A.** What it'll show state by state is really the change from
17 this base condition.

18 **Q.** Let's look at -- there is a panel there that says "NC"
19 over it, which is on the middle right-hand side.

20 **MR. GULICK:** Again, if you could enlarge that so we
21 could see it better.

22 **Q.** What does this panel show?

23 **A.** When we apply the ten percent change in sulfur dioxide
24 emissions in North Carolina, we see the resulting change from
25 the base condition. And we'll see, also, a scale that

1 relates to the degree of that change, again in micrograms per
2 cubic meter. And what's important here is the relative
3 change. If we made no change, everything would be great on
4 this plot. Since we did a ten percent change in the state,
5 and only in North Carolina in this case, we can see the
6 spatial relative change or benefit of that sulfur dioxide,
7 10 percent sulfur dioxide change, and, of course, here we can
8 observe that the greatest benefit is to almost the whole
9 State of North Carolina, with certainly some downwind benefit
10 to the northeast, being Virginia and Delaware, Maryland and
11 New Jersey in this case, with some small benefit in South
12 Carolina, and a little bit of spillover perhaps in portions
13 of Tennessee.

14 On this particular -- maybe I should reemphasize this is
15 just one meteorological day in many days that we modeled.

16 Q. And could you look now at the panel -- there is a panel
17 there for Tennessee right to the left of that.

18 MR. GULICK: Could you enlarge that, Gary?

19 THE WITNESS: And, similarly, we reduced the
20 emissions in Tennessee but held them constant in all the
21 other states. Maybe that's a key point to mention here.

22 And in this one, we, likewise, show the spatial
23 extent of the benefit of that reduction.

24 Again, these are sensitivity analyses. And we can
25 see here that the reduction in Tennessee benefits both

1 Tennessee and considerable part of North Carolina, western
2 North Carolina, and then northwest Georgia and extending into
3 much of Alabama, as well as up to the northeast in Virginia.

4 Q. And could we now look at the panel in the top left-hand
5 corner, which shows reductions in the state of Kentucky.

6 **MR. GULICK:** If you'll highlight, please.

7 **THE WITNESS:** And again, the reduction only in
8 Kentucky in this case. A ten percent reduction in state SO2
9 gives considerable benefit beyond Kentucky, into North
10 Carolina, Tennessee, Alabama, little bit of Georgia and
11 considerable part of Virginia. But, again, an appreciable
12 amount within the state in which the reduction is made, that
13 being Kentucky.

14 Q. And now I'd like to focus your attention to the bottom
15 left-hand corner, to Alabama.

16 A. Well, in a similar process, we're seeing the reduction
17 in Alabama benefiting Alabama to the greatest extent, but,
18 also, it's that benefit or relative reduction of the fairly
19 mild 10 percent reduction extending into North Carolina and
20 across South Carolina and Georgia, as well as Mississippi and
21 part of even Florida in this case.

22 Q. I'd now like to direct your attention to Exhibit 3,
23 page -- it's electronic page 14.

24 **MR. GULICK:** Your Honor, these documents don't have
25 page numbers, but it will be shown on the screen and it may

1 be easier to see there.

2 **THE COURT:** All right.

3 **MR. GULICK:** It's for the SO2. It's got a date on
4 it of May 15, 1993.

5 Once again, if you would look at the -- at North
6 Carolina and highlight the state of North Carolina on the
7 screen here so we can see, more enlarged, what the benefit
8 is.

9 Again, if you're looking at the hard copy, Your
10 Honor, it would be May -- what did I say -- May 15, 1993.

11 We now have enlarged on the screen the panel from
12 North Carolina on that date.

13 **THE COURT:** Okay.

14 **THE WITNESS:** This is a, of course, late spring
15 day, and we did have a range of the sensitivity analyses run
16 for, as I said, various meteorological days in the modeling.
17 And, clearly, here again, North Carolina benefits the most
18 from its reductions in North Carolina, but there is also
19 spillover benefits to other states, including South Carolina
20 and Virginia in this case.

21 **BY MR. GULICK:**

22 **Q.** And now, if we look at the panel next to that for
23 Tennessee and enlarge that one as well.

24 That's now shown enlarged on the screen.

25 **A.** So when we reduce the emissions only in Tennessee in

1 this sensitivity analysis, we see we benefit to a great
2 extent much of Tennessee as well as perhaps half of North
3 Carolina, South Carolina, and Georgia in this case, and most
4 of far western Virginia, and certainly a little bit of
5 Kentucky, so, again, a considerable spillover benefit of this
6 reduction in Tennessee.

7 Q. And now let's look at the panel for Kentucky.

8 A. And likewise, on this same meteorological day, the
9 reduction in Kentucky benefits to a pretty good extent its
10 own state, but also North Carolina and Tennessee, South
11 Carolina and Georgia. And in West Virginia and Virginia
12 here, we're getting some lessening of the resulting sulfates
13 predicted.

14 Q. And again, on the same meteorological day, Alabama.

15 A. I think this one for Alabama illustrates what we have
16 observed here, is that we get much, if not most, of the
17 benefit in the state in which the reductions occur, but it
18 certainly benefits in this case to Tennessee, Georgia, over
19 quite a range, and a little bit of South Carolina, and I
20 believe I faintly see a little bit of benefit in western
21 North Carolina there, a little bit of a yellow speck.

22 MR. GULICK: And now I'd like to go to Exhibit 3,
23 page 6.

24 And, Your Honor, if you're looking at the hard
25 copy, this has a date of July 19, 1995, and it's now shown on

1 the screen.

2 Once again, I'd like to draw your attention to the
3 panel for North Carolina.

4 **A.** For this July day, we see a sulfate reduction resulting
5 from the SO₂ reduction from the emission sources in North
6 Carolina particularly benefiting North Carolina, but also a
7 considerable part of South Carolina and a little bit of
8 Virginia.

9 Again, I might emphasize, while we're seeing a variation
10 here, we do have different wind conditions, different
11 meteorological conditions as we go across different days, and
12 actually across different sources, states, on a given day.

13 **Q.** And now Tennessee, in the middle of the page.

14 **A.** Well, considering the winds on that day, it looks like
15 we have just a very little bit of benefit in Tennessee, even
16 though that's where the reductions occurred, but considerable
17 benefits in portions of North Carolina, South Carolina and
18 Georgia on that meteorological day.

19 **Q.** And now if we look at Kentucky.

20 **A.** It doesn't appear that we show any benefit within the
21 state of reduction in this particular case for Kentucky, but
22 considerable benefit in North Carolina, with some
23 considerable benefit in South Carolina and Virginia, and some
24 smaller degree of benefit in Georgia.

25 **Q.** I'd like now to go to Exhibit 3, page 2. This is the

1 last one I think I'll ask you to look at. This is for
2 July 12, 1995. And then scale down and enlarge it there.

3 Would you look at North Carolina and, again, observe
4 what is shown on this meteorological day.

5 **A.** This day in July, we see most of the benefit gained by
6 reducing sulfur dioxide in North Carolina occurring in North
7 Carolina, with considerable benefit across North and South
8 Carolina, a little bit of southeastern Virginia and a little
9 bit of Georgia.

10 **Q.** Now, you indicated before, and I'll just mention again,
11 these are a 10 percent reduction of statewide sulfur dioxide?

12 **A.** That's correct.

13 **Q.** And so is this viewed as a -- in a relative sense, was
14 this viewed as a small or large reduction?

15 **A.** Well, I think it depends on the state and the nature of
16 a reduction and strategy, but it could be viewed as a
17 relatively small reduction when we talk about a major part of
18 an inventory being reduced, say, more than 50 percent or up
19 to 90-some percent. This is only a 10 percent reduction in
20 the inventory.

21 It is a reduction of the total inventory for the state,
22 but as we recall from the table 2.2, the vast majority of the
23 inventory would come from utility boilers, with a
24 considerably lesser degree industrial, and the rest of the
25 categories is fairly minor.

1 **Q.** Let's now look at Tennessee in this case. Let's see
2 that enlarged.

3 **A.** On this day, Tennessee benefits to a great extent from
4 the reductions in Tennessee, but so does western North
5 Carolina, considerable amount of Kentucky, Alabama, Georgia
6 and South Carolina, and a little bit of Virginia also
7 benefits from that also, given the wind patterns and so forth
8 on that day.

9 **Q.** And can we look at Kentucky in the top left-hand corner
10 and enlarge that.

11 **A.** I think, likewise, Kentucky benefits to a great extent
12 from their own reduction on that day, but considerable
13 benefit shown in North Carolina, Tennessee, South Carolina,
14 Georgia and Virginia and West Virginia. And even Ohio in
15 this case and a little bit of Indiana would benefit
16 considerably.

17 **Q.** Thank you.

18 Now, was one of these figures or charts actually
19 included, or a set of them, included in the final report?

20 **A.** It was. And the whole set was made part of the record,
21 recorded in the various appendices.

22 **Q.** So this set that we've been looking at were included as
23 part of the record?

24 **A.** Yeah. Correct.

25 **Q.** I now want to draw your attention back to Exhibit 1,

1 which is the final report itself, and I want to go to -- I'd
2 like to draw your attention to Figure 3.11 on page 53.

3 **MR. GULICK:** Which, Your Honor, is Chapter 3, page
4 3.18, of the hard document. But that's now also shown on
5 your screen. Page 3.18 of the printed document.

6 **THE COURT:** And we're back to Exhibit 1?

7 **MR. GULICK:** Yes, Your Honor.

8 **THE COURT:** All right.

9 **BY MR. GULICK:**

10 **Q.** And I'd like to draw your attention, Mr. Nicholson, to
11 the figure at the top -- figure at the top, which is Figure
12 3.11, and I'd like you to first just sort of orient us a
13 little bit to this to explain what this table or figure
14 shows.

15 **A.** This figure is a, if you would, a summary plot of a lot
16 of what we just looked at in terms of sensitivity plots, but
17 it's arranged such that the episode days by -- the modelers
18 took this and, if you would, composited it in an annual sense
19 to represent the various meteorological days to represent a
20 whole year.

21 So it's arranged by a Class 1 area within the SAMI
22 region across the bottom, as you can see, going from Alabama,
23 West Virginia, with our North Carolina Class 1 areas in the
24 middle.

25 **Q.** So that's the list on the bottom that's sort of

1 horizontal -- that's sort of vertical.

2 **A.** That's correct. And we call it a stack bar chart, in
3 that the contributions on an annual basis to this 10 percent
4 sensitivity analysis are assigned based on the results of the
5 modeling in the stack, in the order that are seen on the
6 right-hand side, with a different color for each state's
7 contribution to the benefit seen at the various Class 1
8 areas.

9 **Q.** So you have -- on the right-hand side, you have a key,
10 if you will, that lists the states, and each of them has a
11 color associated with it? Is that what's going on here?

12 **A.** That's correct.

13 **Q.** And are the eight SAMI states indicated by their
14 initials, if you will?

15 **A.** They are, in various colors, starting at the bottom with
16 Alabama, going up to West Virginia.

17 **Q.** Now, what's above that? We see some things that are
18 not --

19 **A.** What's above that, we also did sensitivities for
20 regions, SAMI as a whole as well as outside regions, and just
21 a very brief explanation. It's the central states outside of
22 the region.

23 **Q.** That's CN?

24 **A.** CN. And midwest states, MW; northeast states, NE.

25 Florida and Mississippi are in the southeast but were not

1 part of SAMI, so we wanted to understand what benefit we
2 might gain by reductions if they were done in those two
3 states. And then "other."

4 Q. And then what do the bars you've indicated -- what do
5 the bars represent?

6 A. The bar heights for each color represent -- and I think
7 this is the most important part of this plot -- is the
8 relative benefit of one state to the others in improvement or
9 reduction in sulfate aerosols in each of the Class 1 areas.

10 Q. I'd like to focus your attention now to the -- there are
11 four bars. Starting from the third from the left, which is
12 Joyce-Kilmer NC; and then we have four bars, Lookout,
13 Tennessee. Do you know where that is located?

14 A. Yes.

15 Q. And where is it located?

16 A. That's on the -- well, it's in the Smokies, but it's on
17 the western edge of the Smokies.

18 Q. And then we have -- and when you say "Smokies," do you
19 mean --

20 A. In the Great Smokies, but on the Tennessee side.

21 Q. You mean the Great Smoky Mountains National Park?

22 A. Correct.

23 Q. And then you have Shining Rock; is that right?

24 A. Shining Rock, and then Linville Gorge.

25 MR. GULICK: Gary, if you'd highlight that on the

1 screen there.

2 Not Shining Rock. Expand those four on the screen
3 so it's a little easier to see them. And also the table of
4 the states. Make it a little easier to follow what's going
5 on here.

6 **BY MR. GULICK:**

7 **Q.** So tell us a little bit about what these show.

8 **A.** Again, what they show is kind of the summation on an
9 annual basis of the sensitivity -- individual sensitivity
10 plot, some of which we looked at earlier. And, for example,
11 what we're seeing here at Joyce-Kilmer is the relative
12 benefit, starting at the bottom of the bar, of the reductions
13 in Alabama and then Georgia.

14 **Q.** And Alabama is what color?

15 **A.** It's a blue color on the screen here, Alabama being a
16 maroon color, and Kentucky is sort of a cream.

17 **Q.** I'm sorry. Did you say Alabama was a maroon color?

18 **A.** Georgia is a maroon color. Excuse me. I'm sorry.
19 Alabama is the blue color.

20 Kentucky is above -- they're taken in order of the
21 legend on the right-hand side as you go up the bar, and these
22 indicate the relative benefits of the reductions in those
23 various states as it benefits these Class 1 areas.

24 So perhaps reading this -- and Tennessee would be the
25 fifth -- sixth one up above South Carolina, being the darker

1 maroon, if you would. Tennessee is kind of the peach color.
2 I guess we tried to make it orange, but it didn't quite come
3 out that way.

4 But you can see it is the largest, in a relative sense,
5 contributor to the benefit in that Joyce-Kilmer, whereas
6 Alabama appears to be the second largest benefit to that
7 area, and Georgia would be, I think, about the next largest,
8 with Virginia -- No. Well, another state at the top or group
9 would be --

10 Q. The dark blue, maybe, could that be the central states?

11 A. I think that is the central states.

12 So it gives us a sense of the relative benefit of
13 reductions through the sensitivity analysis, reductions in a
14 particular state, to our Class 1 areas here, as well as all
15 of them across the SAMI region.

16 Q. And looking at this bar chart, looking at these four
17 here, did SAMI draw a conclusion with respect to the impacts
18 on these four Class 1 areas?

19 A. I think the most significant conclusion that SAMI drew
20 was that we, as we look at the various Class 1 areas, that we
21 get a significant benefit within the state in which we make
22 reductions, but we also get a very significant benefit from
23 reductions in other states, and depending on the Class 1
24 area, that varies a little bit.

25 These particular ones are that -- for our Class 1 areas

1 in North Carolina, we get the greatest benefit from
2 reductions in Tennessee, as you can see from the height of
3 the peach-colored segments in each of the four areas.

4 As we see, Shining Rock and Linville Gorge, North
5 Carolina, does also, with its reductions, benefit a
6 considerable amount to Linville Gorge and Shining Rock, a
7 lesser degree to the others, but still less than the benefit
8 shown in the Tennessee reductions.

9 Q. Are there benefits shown in this bar from reductions in
10 Alabama and Kentucky?

11 A. I was just going to say, we see what I would say is an
12 appreciable benefit also in both Alabama and an increasing
13 benefit in Kentucky, the sort of cream-colored or
14 yellow-colored bar or segment, by the reductions in Kentucky
15 on Shining Rock and Linville, especially, but also an
16 appreciable amount in the Great Smokies and at Joyce-Kilmer.

17 Q. Now, on the -- did SAMI actually represent what it found
18 about this in words?

19 A. Yes.

20 Q. Like to draw your attention to the preceding page, and
21 I'd like to direct your attention to the middle paragraph on
22 the left in the first few lines of that. This would be the
23 preceding page in the written document.

24 What does it say there?

25 A. Well, in words, it says I think what we've observed from

1 the summary bar chart, is that annual average sulfate
2 particle mass at the Great Smoky Mountains National Park on
3 the Tennessee/North Carolina border and at Joyce-Kilmer,
4 Slickrock and Shining Rock and Linville Gorge Wilderness
5 Areas in western North Carolina are most influenced by sulfur
6 dioxide reductions in Tennessee.

7 **Q.** And the next sentence?

8 **A.** But sulfur dioxide emissions in Georgia, Alabama, and
9 North Carolina, the central and midwest regions beyond SAMI,
10 also influence sulfate fine particle mass at these sites.

11 **Q.** Thank you.

12 Do you know what the biggest source of sulfur dioxide
13 emissions in Tennessee is?

14 **A.** TVA.

15 **Q.** Do you know what percentage total Tennessee emissions
16 TVA's constituted in 1970 -- excuse me -- in the year 2002?

17 **A.** I understand 72 percent of the state's total SO₂
18 emissions.

19 **MS. COOPER:** Going to object, Your Honor. There's
20 no foundation for his answer.

21 **THE COURT:** Overruled.

22 **BY MR. GULICK:**

23 **Q.** Now, in talking about all of the sensitivity analyses
24 that we've been looking at --

25 **THE COURT:** I think we will -- since you're

1 starting another area, we'll take our midmorning, 15-minute
2 recess, and after the recess, come back to the stand,
3 Mr. Nicholson.

4 Take a 15-minute recess, Marshal.

5 **(Recess.)**

6 **THE COURT:** All right, Mr. Gulick.

7 **MR. GULICK:** Thank you, Your Honor.

8 **BY MR. GULICK:**

9 **Q.** Mr. Nicholson, you were indicating that, in looking at
10 the graphs, looking at the reduction in sulfur dioxide, that
11 produces a benefit in that state or some other state, does
12 that say anything about the source of where those emissions
13 are coming from?

14 **A.** It certainly suggests that it does indicate that the
15 source where a -- particularly in a relative sense, you would
16 certainly get the biggest benefit. For example, from
17 reductions in Tennessee to western North Carolina, when you
18 make those reductions and you see the biggest benefit in the
19 downwind area, or a Class 1 area, it certainly suggests the
20 importance of those reductions, and consistent with the
21 meteorological conditions, we're seeing those benefits.

22 **Q.** Now, you've indicated that there was a consensus
23 process. Was there a consensus process about the selection
24 of the days that were being evaluated?

25 **A.** There was. In fact, SAMI, if I didn't emphasize that

1 early on, was really a voluntary effort to look at this, and
2 it was consensus by all parties, and we were very deliberate
3 in making sure that we did get a consensus on all aspects of
4 it, including emissions inventory.

5 I may have mentioned it in these workgroups that were
6 formed by sector. And, of course, that might be one reason
7 it took so many years to do it, because it was a consensus
8 process; it wasn't driven by specific federal or state
9 regulatory requirement to do this. It very much was a
10 consensus process, and we labored at length at times to make
11 sure we got that and make sure the data was accurate and
12 correct and acceptable to all the parties.

13 Q. Do you know whether TVA has coal-fired power plants in
14 Alabama?

15 A. They do.

16 Q. And do they?

17 A. They do.

18 Q. And do you know if TVA has coal-fired power plants in
19 Kentucky?

20 A. They do. Two that I'm aware of.

21 Q. And did the various sensitivity analyses that you've
22 been talking about earlier this morning before the break, did
23 SAMI reach some principal conclusions from -- broad
24 conclusions from these initial reductions in individual
25 states?

1 **A.** We did. I think very significant conclusions were
2 reached. Particularly, when a state makes a reduction, it
3 gets the greatest benefit of that reduction in that state, in
4 other words, in the state in which the reductions occur,
5 which became very significant to us later on in North
6 Carolina. But, also, I think it's clear that in almost every
7 case in our observations, we saw benefits in states, or in
8 other states, from benefits in a given state.

9 **Q.** From -- you said from benefits in a particular state?

10 **A.** Well, benefits in the sense that it reduced sulfate
11 levels in the downwind or receiving state.

12 **Q.** And did those two conclusions drive any of SAMI's final
13 recommendations?

14 **A.** I believe it did.

15 **Q.** In particular, what? What was that?

16 **A.** Well, I think the most significant one that it drove was
17 the conclusion that sulfur dioxide emissions reductions are
18 very important, if not the most important emissions reduction
19 strategy one could employ to improve visibility, particularly
20 since sulfate is a primary pollutant that degrades
21 visibility.

22 **Q.** Touching briefly on visibility, when we're talking about
23 visibility in regard to SAMI, what are we talking about?

24 **A.** We're really talking about the ability to see an object
25 at some distance, both identifying the shape or outline or

1 contrast or color of that object against the background, and
2 that's the concept of visibility.

3 Q. You had said that SAMI did a socioeconomic assessment to
4 the visibility.

5 A. SAMI did.

6 Q. I'm sorry. SAMI did; is that right?

7 A. SAMI did, yes.

8 Q. I'd like to draw your attention to Exhibit 1, page 128.
9 That's the electronic page.

10 **MR. GULICK:** And it's page 8.1, Your Honor, in the
11 Exhibit 1, the hard copy. We've got it highlighted on the
12 screen.

13 **BY MR. GULICK:**

14 Q. And if you could direct your attention to -- there's a
15 paragraph called "Visibility," with that heading, on the
16 right-hand side.

17 **MR. GULICK:** I'll wait until Your Honor finds that
18 page. It's now highlighted on the screen as well. The hard
19 copy page is 8.1, Your Honor.

20 **THE COURT:** Okay.

21 **BY MR. GULICK:**

22 Q. And Mr. Nicholson, there's -- in the right hand column,
23 there's a paragraph that has a heading called "Visibility."
24 Could you just tell us what SAMI is talking about here?

25 A. As a value to the people assigned to improve visibility,

1 and they recognized that that's a value that they want to
2 see, and they, in fact, can assign a willingness-to-pay
3 figure to improvements in visibility, and it's characterized
4 in two ways; one for the local people that live in an area
5 where they value visibility and it's called residential
6 visibility; and then recreational visibility for individuals
7 that, perhaps, want to go to a place to observe a vista or
8 realize that they can see, in other words, have a good
9 visibility in an area, that there is a value assigned to
10 that.

11 Q. Did Sally -- excuse me -- did SAMI engage a contractor
12 to do an economic analysis of that value on visibility?

13 A. They did.

14 Q. And did the -- did SAMI publish in this document the
15 results of that economic evaluation?

16 A. Yes, SAMI did.

17 Q. Like to direct your attention to electronic page 133,
18 which, I believe, Your Honor, is 5 pages forward, 8.6 in the
19 hard copy, Your Honor.

20 **THE COURT:** All right.

21 **BY MR. GULICK:**

22 Q. And Mr. Nicholson, if you're on this page, there are
23 three tables here. Could you explain what these tables are
24 about?

25 Why don't you start with the one on the bottom, which is

1 table 8.6, which is now enlarged on the screen.

2 **A.** This table summarizes the results of that assessment
3 that was made by the contractor in the interviews and in the
4 meetings they had. And this one deals with what I referred
5 to earlier as residential visibility. In other words, what
6 the locals, if you would, would assign a value once it was
7 described to them for each of the strategies in the two
8 timeframes. And I think the most significant part is it
9 ranges from \$224 million for the strategy in 2010, going from
10 the base or what's "On the Way" strategy we talked about
11 earlier, to the first of the additional strategies being one.
12 And then when we go from A2, which again is our base in 2040,
13 they would assign a value of \$1.46 billion to that
14 improvement in visibility that they would realize.

15 **Q.** Now, that figure you just mentioned was associated with
16 the change in strategy from "On the Way" to B3?

17 **A.** B3 in 2040.

18 **Q.** B3 is --

19 **A.** Is the most stringent of the ones that we tested in the
20 analysis.

21 **Q.** And what was the range for that change in the -- in
22 2010?

23 **A.** It's right at a billion dollars or a little bit more.

24 **Q.** Now, this is the residential visibility benefit?

25 **A.** That's correct.

1 **Q.** Now, let's leave that table and look at the table at the
2 top of the page, which is table 8.4. What does this table
3 show?

4 **A.** Well, in like manner, it reflects the summary of the
5 analysis for the value of improving visibility in a
6 recreational context, and that would be for individuals that
7 would go somewhere to observe a vista or a scenic view and
8 the value to them in being able to see that, in other words,
9 it having improved visibility.

10 And in 2010, as you can see, the range from, in the SAMI
11 eight-state region, of \$155 million to maybe a national
12 context of almost \$800 million, but maybe something less than
13 a national perspective of 640 million.

14 **Q.** And which strategy changed?

15 **A.** That's the -- again, to the first level of the strategy
16 beyond what's our base strategy. Interesting observation is
17 that nationally, for our region, the Southern Appalachians,
18 there's a pretty good value, the recreational value, to
19 improve visibility, essentially \$800 million for that
20 first-level strategy in 2010.

21 And, likewise, when we go from the A2 to the third
22 level, a more stringent strategy, B3, we're talking about a
23 two-and-a-half-billion-dollar benefit from a national
24 perspective, you know, of citizenry that's maybe not a
25 resident of the region, their view of the value of being able

1 to see a vista, and you can see how within the eight-state
2 region, it's about 500, a little bit less than 500 million in
3 some of the other regions, but not on the national level;
4 it's still a large number, \$2 billion.

5 And then, similarly, in the year 2040, going from the
6 base to the first level of additional strategy, you can see
7 the numbers range nationally from about 1 and a half billion
8 on B1 to -- B3 going to over or nearly \$3 billion in value,
9 and then somewhat less for the sub regions of the eight SAMI
10 states and the sub national regions of the non SAMI regions.

11 Q. Let's go to the table 8.5, I guess, which is in the
12 middle of the page.

13 Could you explain what's going on in this table?

14 A. Well, here it's actually broken down by Class 1 areas
15 for each of the two future strategy design years of 2010 and
16 2040, and then again broken down for the first extended
17 strategies, B1 and B3; that is, the improvement from the base
18 to the B1 strategy and improvement from the base A2 to A3 in
19 each of the two strategies, and we can get a sense of the
20 value people assign to the improvement.

21 And I guess a really impressive point of this is to
22 illustrate the value people place on visibility improvements
23 in the Great Smoky Mountains and the Shenandoah National
24 Park, and to a lesser degree in the other Class 1 areas.

25 Q. Thank you.

1 Did North Carolina support SAMI by -- in a monetary way?

2 **A.** We did. We contributed to the effort over the years,
3 \$50,000 per year from the state air program, as did a number
4 of other states, and then there was also support from the
5 USEPA to SAMI in varying amounts over the years for this
6 analysis.

7 **Q.** Did SAMI -- excuse me, did the State of North Carolina
8 provide personnel labor, if you will, in performance -- in
9 the SAMI process?

10 **A.** We did, certainly a considerable amount of time. I put
11 in a pretty good share of my time over the years, as did
12 other staff in the division.

13 **Q.** Do you recall the Tennessee Valley Authority ever
14 dissenting from the -- or disagreeing with the final
15 conclusions of SAMI?

16 **A.** I don't recall that they did dissent. We were fairly
17 careful at trying to get a consensus among all of the parties
18 and, as I recall, at the very last meeting here in Asheville,
19 where the governing body, the commissioners and the
20 secretaries, were here, it was a concerted effort to go
21 around the group of seven states and also others who had
22 participated to get the consensus.

23 **Q.** I'm going to come back to SAMI with another witness, but
24 at this time I would like to ask that Exhibit 1, the SAMI
25 Final Report, Exhibit 2, the SAMI Report Summary, and Exhibit

1 3, the geographic sensitivities, be admitted into evidence.

2 **THE COURT:** Let those be admitted.

3 **MS. COOPER:** Your Honor, I'd like to object to the
4 admission of Exhibit 3.

5 **THE COURT:** Show the objection by TVA.

6 **MS. COOPER:** Yes, as to the admission of Exhibit 3.

7 **THE COURT:** That objection just goes to Exhibit 3?

8 **MS. COOPER:** Just to Exhibit 3.

9 **THE COURT:** All right.

10 **MS. COOPER:** And, Your Honor, we think that the --
11 that exhibit is hearsay.

12 **MR. GULICK:** Your Honor, I think Mr. Nicholson
13 testified that that was part of the official record of SAMI.

14 **THE COURT:** Yes. I've ruled on the objection.

15 (**Plaintiff's Exhibits Nos. 1, 2 and 3 received.**)

16 **THE COURT:** Any further questions for this witness?

17 **MR. GULICK:** Yes, sir.

18 **THE COURT:** All right.

19 **BY MR. GULICK:**

20 **Q.** Mr. Nicholson, are you familiar with North Carolina's
21 Clean Smokestacks Act?

22 **A.** I am.

23 **Q.** I'd like to draw your attention to Exhibit 5.

24 **MR. GULICK:** Your Honor, we discovered, and we've
25 drawn this to the attention of the Tennessee Valley

1 Authority, that a statute -- the statute copy of part of the
2 act was mistakenly included when it was our intention to
3 include the session law, which is more meaningful for this
4 discussion. Session law was actually produced as a document
5 to TVA early in this litigation. I would like to substitute
6 that. I have hard copy substitutes for this exhibit, if a
7 may approach the bench.

8 May I approach the bench? I have copies for the
9 Court and also --

10 **THE COURT:** Let me have a copy then. You may
11 approach.

12 **BY MR. GULICK:**

13 **Q.** Mr. Nicholson, if you'll now look at the screen. Do you
14 recognize this?

15 **A.** I do. It's the Clean Smokestacks Act as it was
16 presented in the bill, in the legislative bill.

17 **Q.** Is this, in fact, Session Law 2002-4?

18 **A.** Yes.

19 **Q.** When was this act actually enacted?

20 **A.** In June of 2002.

21 **Q.** How did you become familiar with it?

22 **A.** I became familiar by working on the act from early 2001,
23 January 2001, with the various parties that were working on
24 this bill.

25 **Q.** How did you first come to be involved in it?

1 **A.** I attended what was, I think, the first meeting the
2 department was involved in, with the key legislative sponsors
3 of this bill and the utilities and environmental community to
4 address the substance of the bill.

5 **Q.** And were you invited to that meeting?

6 **A.** I was.

7 **Q.** And at that time, you were employed by the Division of
8 Air Quality?

9 **A.** I was.

10 **Q.** And what took place at that meeting?

11 **A.** As I recall, what took place there was an understanding
12 among the various parties of what the bill would do, the
13 reductions and the cap and so forth, and the understanding
14 that this would be reductions in North Carolina; and there
15 was some discussion, of course, of cost recovery at that time
16 in then that version of the bill.

17 But, fundamentally, it laid out the requirements of the
18 cap, SO₂, the NO_x requirements, and there was some discussion
19 of what had previously been proposed on mercury and CO₂, and
20 at that time it was agreed upon by all of the parties that we
21 would not have a mercury cap or a CO₂ goal, but that by a
22 date certain, three years hence, we, the department, the
23 division, would report on recommendations on those two
24 aspects of the multi-pollutant program, with recommendations
25 for the legislature on what to do regarding mercury and CO₂.

1 **Q.** Talk a little bit about the caps and what was discussed
2 and what was agreed.

3 **A.** What was discussed and agreed upon was that SO₂
4 emissions, for example, would be reduced in a phased
5 approach, a two-phase approach, from approximately 500,000
6 tons to 130,000 tons from that point in time, with an interim
7 phase for SO₂ in 2009, where emissions would be cut by 50
8 percent, actually, in North Carolina and then, again, another
9 approximately 50 percent down to 130,000 tons for the year
10 starting January 1st, 2013.

11 In addition, for NO_x, we would go from approximately
12 245,000 tons at that time down to 56,000 tons ultimately,
13 starting for the year 2009, with an interim phase at 60,000
14 tons for the year 2007.

15 **Q.** Who are the entities whose emissions were going to be
16 subject to this act?

17 **A.** These were our two investor-owned utilities, Progress
18 Energy and Duke Energy, and it was subject for all of the
19 power plants in -- coal-fired plants in North Carolina.

20 Another key feature that was agreed upon at that time
21 was this would be a hard cap in North Carolina. In other
22 words, into the future, any growth due to new facilities and
23 so forth would have to be within this cap. In other words,
24 it could not exceed it.

25 **Q.** Now, was any particular modeling done to determine what

1 the benefits would be of this cap?

2 **A.** Not specifically for settlement of those caps, but we
3 carried into that meeting, I think, considerable experience
4 from SAMI, for example, that the levels that we were talking
5 about, basically a 78 -- 77-78 percent reduction in NOx and
6 73 percent reduction, actual reduction, in North Carolina for
7 SO2 was a very significant reduction, but a very reasonable
8 one that made sense from a cost-effectiveness standpoint.
9 And given that the parties agreed to do this and accept the
10 requirement that we would look at mercury and CO2 later, we
11 didn't feel like we needed to do modeling specifically to
12 argue that that was the right level.

13 **Q.** Now, were the terms that you've been describing
14 ultimately enacted in the law as we now have sitting here in
15 front of us in Exhibit 5?

16 **A.** They were.

17 **Q.** And in which section of the act are those set forth?

18 **A.** In Section 1.

19 **Q.** In Section 1?

20 **A.** Section 1, yes, sir.

21 **Q.** And that begins on page 1 of Exhibit 5 which we have in
22 front of us?

23 **A.** It does.

24 **Q.** Now, here in this act, it talks about investor-owned
25 public utility. What is it talking about there?

1 **A.** As a practical matter, it's our two major utilities in
2 North Carolina, which, of course, produce the vast majority
3 of the power in the state.

4 **Q.** And does this section provide that each of them has a
5 separate cap?

6 **A.** It does. In fact, we had some discussion on combined
7 cap, and, actually, at the suggestion of the utilities, they
8 would rather accept a company -- separate cap for each
9 company system, and that was acceptable to all the parties.

10 **Q.** And was that --

11 **A.** That's where we ended up.

12 **Q.** And that's what was eventually enacted, that Duke Power
13 had a cap for NOx and SO2 --

14 **A.** That's right.

15 **Q.** -- and, likewise, Progress Energy had a cap for NOx --

16 **A.** That's correct.

17 **Q.** -- emissions and also SO2?

18 And was this phased approach that you described, was
19 that carried forward into the actual enactment?

20 **A.** It was. And that was something that we insisted on
21 having so that there could be a clear demonstration that
22 progress was being made in the interim in a fairly short time
23 for each of the pollutants as opposed to waiting until the
24 end of the compliance period to see whether or not progress
25 was actually made in producing emissions.

1 Q. You have a board and easel right there. If you could
2 make a little chart of the years and the caps for each of
3 these two companies.

4 A. I need something to write with, I guess. Oh, this one
5 here. Okay. I'm sorry.

6 Q. Please write it big enough so the Judge can see it.

7 A. I'll just do Duke Energy and Progress Energy, best way
8 to scale this thing, but let me put '07, '09 and 13 up here
9 for the years.

10 **THE COURT:** Can defense counsel see it? I can see
11 it. That's fine.

12 **THE WITNESS:** I don't know if I remember the
13 numbers correctly.

14 **BY MR. GULICK:**

15 Q. Would you like a copy of the act?

16 A. Let me see if I can get it without.

17 For Progress Energy, let's divide between SO₂ and NO_x.
18 This is the most easy way to understand it. I'll put SO₂
19 only for 2013, since the phase in for NO_x is 2007 and 2009.
20 SO₂ is 2009 and 2013.

21 Let's see. The total between the two companies in 2007,
22 I think as I may have indicated, was 60,000 tons. I mean,
23 excuse me, of NO_x. Of NO_x.

24 So it's 35,000 in '07 for Duke; and for Progress Energy,
25 it's 25,000 tons for NO_x in 2007.

1 Now, might observe that for Progress Energy, that was
2 their final compliance, 25,000 tons, and it was for 2007.
3 Duke had a further requirement for NOx to go to 31,000 tons
4 of NOx, and Progress stayed at 25,000 tons in 2009 and
5 thereafter. So, really, that 25 is from then on that they're
6 capped for their system for NOx.

7 For SO2 -- maybe I'll back up a little bit. In 2013,
8 Duke Energy's cap is 80,000 tons of SO2 for 2013, and
9 Progress Energy's cap is 50,000 tons from their whole system,
10 and so those are each individual system's requirements.

11 For 2009 in SO2, if I'm remembering correctly, it was
12 150,000 tons for SO2 from Duke and I believe a hundred -- for
13 Progress Energy, 100,000 tons, for a total interim phase of
14 250, hence the half of the 500,000 nominal level that they
15 had been operating at.

16 At the time Clean Smokestacks Act started, they would go
17 down to 250,000 in the interim, or first day for compliance
18 with SO2, and 60,000 for NOx.

19 I shouldn't have put an SO2 by '07. NOx's period is '07
20 and '09; SO2 is '09 and 13 for the two phases.

21 **THE COURT:** And how do you number this exhibit now?

22 **MR. GULICK:** Pardon me?

23 **THE COURT:** How do you number this exhibit? We
24 need that in the record.

25 **MR. GULICK:** I think it's going to have to be

1 Exhibit 5A, Your Honor.

2 **THE COURT:** All right. Let the record reflect the
3 admission of that Exhibit as 5A.

4 **(Plaintiff's Exhibit No. 5A received.)**

5 **Q.** Now, going back to the act, are these, you indicated --
6 are all of these caps set forth in Section 1 of this act?

7 **A.** They are, yes.

8 **MR. GULICK:** Could you bring the act up? This is
9 Exhibit 5.

10 **BY MR. GULICK:**

11 **Q.** And I'd like to draw your attention now to subsection F,
12 which is on page 2, I believe, of Exhibit 5.

13 Are you familiar with subsection F?

14 **A.** I am.

15 **Q.** Just tell us in your own words, what's now up on the
16 screen, tell us what this subsection does.

17 **A.** It puts into the statute a provision that was discussed
18 in our early discussions on this, and we felt that, and I
19 think every party agreed, that it was important for each of
20 the companies to make their own best business decisions on
21 how we would comply with the caps. So they can certainly
22 determine how they will achieve these, but the caps
23 themselves become a hard obligation, including the interim
24 phase caps for each of the companies.

25 **Q.** What does the last sentence of this subsection mean?

1 **A.** And it says that this subsection shall not be construed
2 to limit the authority of the commission to impose specific
3 limitations on the emissions of oxides of nitrogen and sulfur
4 dioxide from an individual coal-fired generating unit owned
5 or operated by an investor-owned public utility.

6 And this was put in for the purposes of ensuring that if
7 we had air quality issues associated with an individual plant
8 or facility and it needed to be specifically regulated in
9 some manner to assure we've met those air quality goals, that
10 we had the authority to do that.

11 **Q.** Now, in the federal government's Clean Air Acid Rain
12 Program, or Title IV, can companies acquire allowances by
13 buying them or receiving them rather than actually making
14 emission reductions?

15 **A.** They may, or they could have, and, in fact, did, and I
16 might add that one of the reasons, besides SAMI, that we
17 realized we needed this Clean Smokestacks Act was that our
18 utilities, quite frankly, had pretty excessive emissions.

19 **Q.** When you say "our utilities," you mean what?

20 **A.** Progress Energy and Duke Energy. And that they -- these
21 emissions needed to be reduced significantly, as certainly
22 SAMI told us we should do that, and our realization that they
23 had not put sufficient controls on these utilities. They, in
24 fact, had a record of acquiring compliance allowances to
25 comply with the Title IV provisions under acid rain.

1 **Q.** Is it possible under Clean Smokestacks Act to meet these
2 caps by acquiring allowances?

3 **A.** No, it is not. We specifically said no allowances
4 acquired could substitute for real reductions in the state.
5 In other words, we would not allow any kind of on-paper
6 reductions by use of these allowances.

7 **Q.** Let me draw your attention to provision subsection (i),
8 which is on the bottom of page 2 that we have in front of us
9 and carries over to the next page on this Exhibit 5.

10 Are you familiar with this section?

11 **A.** I am.

12 **Q.** Subsection. What is this about, this subsection (i)?

13 **A.** Well, somewhat like the provision I just talked about,
14 where paper credits couldn't be used to meet the requirements
15 of the Clean Smokestacks Act itself if by virtue of putting
16 on controls, one of our two utilities, Duke or Progress,
17 might go beyond -- in putting on controls, go beyond the
18 federal requirement, for example, and create a credit.

19 Any credits created by complying with the Clean
20 Smokestacks Act would need to be turned over to the State,
21 and this would be done by agreement with the governor that
22 they would do that.

23 Part of the reasoning, of course, is -- or two primary
24 reasons: One, there was concern, one, that the companies,
25 because rate payers were going to pay for these controls, the

1 companies really didn't own the credits in the first place so
2 it's not their place to sell them; but perhaps more
3 importantly, there was concern that after paying for the
4 controls in North Carolina to get a benefit in North
5 Carolina, we didn't want credit sold to an upwind state that,
6 in turn, might avoid control by use of these credits and we
7 would dilute the benefit that we receive in North Carolina
8 from our reductions.

9 So that was a very explicit concern in the legislation
10 when this feature was put into effect.

11 Q. Do you know whether or not such an agreement was entered
12 into by the governor with each of these two companies,
13 Progress Energy and Duke Energy?

14 A. I do, and they were.

15 Q. Like to draw your attention to Plaintiff's Exhibits 6
16 and 7. Plaintiff's Exhibit 6, actually.

17 Excuse me. Let's look at Plaintiff's Exhibit 6 first.

18 And what is -- do you know what this document is?

19 A. This is a copy of the agreement entered into with Duke
20 Energy.

21 Q. By the?

22 A. With the state, the governor.

23 Q. And is this the agreement that you were talking about?

24 A. It is.

25 Q. And when was this agreement executed?

1 **A.** At about the time that the legislation was signed.

2 **Q.** I direct your attention to the next page, page 2 of
3 exhibit -- I guess it actually would be page three. I'm
4 mistaken. Page 3.

5 It says the execution of this particular contract?

6 **A.** It does, on the 19th of June, 2002.

7 **Q.** And let's look at Exhibit 7. And Plaintiff's Exhibit 7
8 is what?

9 **A.** This is the similar agreement entered into with Carolina
10 Power & Light company, now known as Progress Energy.

11 **Q.** This is essentially the same agreement with Progress
12 Energy as the State had with Duke as well?

13 **A.** It is.

14 **Q.** And -- all right. Thank you.

15 Are the NOx emission caps that you've been describing,
16 the Clean Smokestacks Act, are they voluntary caps?

17 **A.** No. These are enforceable caps.

18 **Q.** And does the act provide a mechanism for enforcement?

19 **A.** It does. It provides for both civil and criminal
20 penalties for failing to meet the requirements on the
21 schedule.

22 **Q.** And are those set forth in Plaintiff's Exhibit 5?

23 **A.** They are.

24 **Q.** Let's go back to Exhibit 5, and I'd like to draw your
25 attention to Section 10 of this session law and --

1 **MR. GULICK:** Gary, I apologize. Going to have to
2 go forward. There you are. Section 10.

3 I'm not sure there's a page number on the actual
4 physical document, Your Honor.

5 **THE COURT:** Okay.

6 **BY MR. GULICK:**

7 **Q.** What does -- are you familiar with Section 10?

8 **A.** I am.

9 **Q.** What does Section 10 provide?

10 **A.** It provides -- states the intent of the general assembly
11 in enacting its legislation, that the State should take all
12 available resources and means, including negotiation and
13 participation in various activities, multistate agreements,
14 et cetera, and petitions, including Section 126 of the
15 federal Clean Air Act, and litigation to induce other states
16 and entities, including Tennessee Valley Authority, to
17 achieve reductions in emissions of oxides of nitrogen and
18 sulfur dioxide comparable to those required by the Clean
19 Smokestacks Act as enacted by Section 1 of this act on a
20 comparable schedule.

21 **Q.** Thank you.

22 Let me ask you, how does the State of North Carolina
23 know that Duke and Progress are complying with this act?

24 **A.** Well, a specific provision in the statute, in the act,
25 required that they report annually on their current plans and

1 progress to date in meeting that; and the other means we have
2 for understanding that is these emissions are recorded
3 through continuous emissions monitors, so we can understand
4 their progress; and, of course, we make visits.

5 Q. I'd now like to draw your attention to Section 12 of the
6 Clean Smokestacks Act, Exhibit 5 again.

7 And in your own words, what does Section 12 involve, if
8 you're familiar -- are you familiar with Section 12?

9 A. Yes.

10 Q. Just tell us, in your own words, what this is about.

11 A. Well, in this provision, it requires the Division of Air
12 Quality of the Department of Environmental Resources to look
13 at the issue of mercury from coal-fired power plants, and
14 then, as I indicated earlier, we would make recommendations
15 three years hence, in this case, September 2005, but we would
16 do an annual report starting in September, 2003,
17 recommendations on what we should do regarding regulation of
18 mercury from each --

19 Q. Looking at the first sentence of this section, could you
20 tell us what that is talking about?

21 A. Part of our -- what it's addressing is the co-benefits
22 of mercury reduction that I believe TVA talked about earlier,
23 and we realized that there will be considerable co-benefits
24 through the installation of scrubbers. These are flue gas
25 desulfurization units for the control of SO₂, also the

1 benefits in terms of SO₂ reductions. Realizing that, that's
2 the factor into our recommendations on mercury controls.

3 Q. Now, you indicated that you were involved with SAMI --
4 excuse me, in the -- prior to the enactment of the Clean
5 Smokestacks Act, you were involved in some discussions. Did
6 you ever have occasion to use any of the SAMI work product
7 during your involvement with the Clean Smokestacks Act?

8 A. I did.

9 Q. And what was that?

10 A. Primarily, that's utilizing the same geographic
11 sensitivity plots that we looked at earlier to discuss with
12 the legislators during the enactment of this, to explain the
13 benefits that enactment of such a program would have to the
14 citizens of North Carolina across the whole state, not just
15 necessarily the western portion of the state, and that, as it
16 turns out, was a very important consideration, in my
17 understanding, influence on the passage of the act.

18 Q. And when you're talking about the geographic
19 sensitivities, does that include the documents that
20 constituted Plaintiff's Exhibit 3?

21 A. That's correct.

22 MR. GULICK: Your Honor, I'd like to move the
23 admission of Plaintiff's Exhibits 5, 6 and 7 at this time.

24 THE COURT: Let those be admitted.

25 (Plaintiff's Exhibit Nos. 5, 6 & 7 received.)

1 **Q.** Mr. Nicholson, are Duke and Progress, in fact, on track
2 to meet the caps set forth in the Clean Smokestacks Act?

3 **A.** The division and the department believe they are.

4 **Q.** And you indicated that there are reports that are --

5 **A.** There are requirements for each of the two utilities,
6 Duke and Progress, to report annually, by April 1st of each
7 year, and then the department, in conjunction with the State
8 Utilities Commission, then, in turn, issues a report with
9 conclusions regarding their progress to the general assembly,
10 and those are required by June 1st of each year.

11 **Q.** Have those, in fact, been completed each year since, I
12 guess -- what was the first one? 2003?

13 **A.** 2003 would be the first. And they have been completed
14 each year, and both utilities have met their obligation each
15 April 1st in reporting.

16 **Q.** I'd like to draw your attention to what has been marked
17 as Plaintiff's Exhibit 10.

18 Do you know what this document is?

19 **A.** This is a cover sheet on this year's most recent report
20 that the department and -- the division and department put
21 together in conjunction with the Utilities Commission to
22 submit to the legislature on the progress of implementing the
23 Clean Smokestacks Act.

24 **Q.** Were you involved in the preparation of this report?

25 **A.** I was.

1 Q. I want to draw your attention to Exhibit 10.

2 **MR. GULICK:** This is electronic page 14. We'll
3 have to see what -- it's page 12 of the hard copy, Your
4 Honor.

5 **THE COURT:** Okay.

6 **BY MR. GULICK:**

7 Q. And I want to draw your attention to the -- I guess it's
8 number 9 at the bottom. I'm not sure if those are paragraphs
9 or not.

10 What does this paragraph 9 at the bottom talk about?

11 A. Paragraph 9 addresses one of the specific items
12 contained in the Clean Smokestacks Act that requires each of
13 the two utilities to report annually in this report the tons
14 of oxides of nitrogen and sulfur dioxide, SO₂, emitted during
15 the previous calendar year from their generating units.

16 **MR. GULICK:** Now, I'd like to draw your attention
17 to the following page, which is hard copy page 13, Your
18 Honor. It's electronic copy page 14. 15, excuse me. Hard
19 copy is page 13, Your Honor.

20 **BY MR. GULICK:**

21 Q. And what's shown here as a response from Progress
22 Energy?

23 A. It's a summary of the emissions over the last calendar
24 year from Progress Energy, and it reflects that they have
25 reduced NOx emissions, NOx, by 59 percent and 25 percent SO₂

1 since 2002.

2 The total calendar year 2007 emissions from the
3 affected, which it means all of the Progress Energy plants,
4 for NOx total is 24,383.

5 As I indicated earlier, they have met their 25,000-ton
6 cap by reaching this level in 2007, 2007 being the first year
7 for NOx, the NOx cap for the first phase. SO2 is 147,242
8 tons. Again, at this point in time, they're, of course, on
9 their way to their 100,000-ton ultimate cap here.

10 **Q.** And the paragraph right below --

11 **A.** First phase cap. Excuse me. I misstated that.

12 **Q.** The paragraph right below that discusses what you've
13 just been talking about?

14 **A.** Yes.

15 **Q.** And it sets forth, again, what the SO2 emissions caps
16 are for 2009 and 2013 for Progress Energy?

17 **A.** That's correct. 100,000 tons for 2009 and 50,000 for
18 Progress in 2013. And this represents -- is a reduced amount
19 from generally a level of about 200,000 tons when the Clean
20 Smokestacks was enacted.

21 **Q.** Let's consider the Duke Energy response, which is
22 further down this page. The next one, actually.

23 **A.** Well, in like manner, Duke has met their 2007 cap for
24 the year, being under 35,000 tons, that being just a little
25 over 33,000. And they have a further requirement to go to

1 31,000 tons in the second phase. Fairly short distance
2 there. But SO2 is at 223,000 tons for calendar year 2007.
3 Again, their next goal for -- first phase requirement on SO2
4 is 150,000 tons in 2009 and then down to 80,000 for the year
5 of 2013 and thereafter.

6 Q. I'd like now to draw your attention to page -- to
7 exhibit -- this exhibit, page 23, same Exhibit.

8 MR. GULICK: It's page 21 of the hard document,
9 Your Honor.

10 THE COURT: Okay.

11 BY MR. GULICK:

12 Q. Did the Department of Environment and Natural Resources,
13 Division of Air Quality, review the data that had been
14 provided by Duke Energy and Progress Energy?

15 A. We did.

16 Q. And did you -- what conclusions did you draw?

17 A. We concluded that, given the evidence presented both by
18 the companies and our observations on the ground and
19 measurements of emissions by the continuous emissions
20 monitors, that they are on the track to meet the requirement
21 and, in our opinion, will meet the deadlines.

22 Q. And you indicated they had met the 2007 deadline.

23 A. For NOx, that's correct.

24 Q. Or cap.

25 A. Cap.

1 Q. And does this first -- this second paragraph here
2 discuss Progress Energy? What is it basically talking about
3 here?

4 A. Again, it relates emissions from Progress Energy and
5 relates it to the numbers of scrubbers or -- first scrubbers
6 here and then, I believe, NOx units put on in their system to
7 achieve these levels.

8 Q. Now, it indicates in this report, in the middle it says,
9 two more Roxboro units are to begin operation in 2008.

10 A. Right.

11 Q. And Mayo unit in --

12 A. In 2009.

13 Q. -- in 2009?

14 A. No. This is the status as of April 1st of this year.

15 Q. Has that status changed at all since then?

16 A. It has. I can relate it to --

17 Q. How is that?

18 A. I can relate it to both companies together, if that
19 would be useful, for July.

20 Q. All right.

21 A. As we understand it, we're now at 11 scrubbers
22 operational in -- between the two systems, Progress and Duke
23 Energy, and while this isn't necessarily the end statistic we
24 want to use, it's a handy way of understanding progress in a
25 program like this, that brings them to about 54 percent of

1 their total generating capacity is now scrubbed.

2 Q. Could you identify the units? Let's talk about
3 Progress.

4 A. Okay. When Progress Energy -- trying to find it on the
5 page here. We know that the first two units went on here in
6 Asheville as far as scrubbers. And Roxboro, I believe we
7 have two scrubbers on -- available for the whole year, 2007,
8 and two more that are available for part of the year, and
9 there would be a total of four at that location.

10 Q. Did you say 2007?

11 A. I should have, yeah.

12 Q. And --

13 A. That's just for Progress.

14 Q. All right. And with respect to Duke?

15 A. In Duke, we have scrubbers on Belews Creek, two units
16 presently, and Marshall, and I believe at -- let's see.

17 Q. So how many of the Roxboro units are currently
18 operational?

19 A. I'm sorry?

20 Q. How many of the Roxboro units are currently operational?

21 A. I believe at least two, if not the third one at this
22 point in time. I'm trying to find it on here.

23 Q. I was going to refresh your memory. One of them had --
24 there's been a change from since the April report date.

25 A. I think we have an additional unit on in Roxboro since

1 the April status report.

2 **MS. COOPER:** Objection; lack of foundation.

3 **THE COURT:** Just a minute.

4 **BY MR. GULICK:**

5 **Q.** You indicate that there is an additional unit coming
6 on -- or has come on?

7 **A.** Well, the report on April 1st says two more Roxboro
8 units are to begin operation in 2008 and the Mayo unit in
9 2009. I believe, from my memory, we have one more Roxboro
10 unit on now, if I'm not mistaken.

11 **Q.** And that occurred since --

12 **A.** I believe so.

13 **Q.** -- since the April date?

14 **A.** Yeah.

15 **Q.** And with respect to Belews Creek, Duke unit, or Duke
16 facility?

17 **A.** My understanding is that both of those units are on now.

18 **Q.** That they're both operational?

19 **A.** That's my understanding.

20 **Q.** Now, I'd like to draw your attention to the final
21 paragraph of the conclusions, which is on the next page,
22 whatever is the -- in summary.

23 **MR. GULICK:** No. Back one page. The bottom of
24 page 22 of the hard copy.

25

1 BY MR. GULICK:

2 Q. Did the -- did the commission, the Utilities Commission
3 and DENR make any conclusions with respect to the progress
4 that had been made by Progress Energy and Duke Energy towards
5 meeting their caps?

6 A. They did.

7 Q. And what were those conclusions?

8 A. The conclusion is that the actions taken to date by the
9 two companies appear to be in accordance with the -- are in
10 accordance with the provisions and appear to allow them to
11 meet their schedules and caps as contained in the Clean
12 Smokestacks Act.

13 Q. I'd like to refresh your memory, if I could, with a
14 report with respect to operational dates. And I want to show
15 you what's now on the screen in front of you and ask you if
16 you -- if this refreshes your recollection with regard to
17 what's in the report.

18 A. It indicates that Belews Creek --

19 Q. Does it refresh your recollection?

20 A. Yes.

21 Q. And having refreshed your recollection, what is your
22 recollection now?

23 A. Well, that both units at Belews Creek are online.

24 Q. And the unit two came online when?

25 A. I think the end of May or so timeframe is what it was

1 scheduled for, and it's my understanding it's on line now.

2 Q. Are Duke and Progress required to report the operational
3 dates to the State of North Carolina?

4 A. I believe that various provisions in their permits would
5 indicate that, when they should be coming on line and so
6 forth. And, of course, they start reporting emissions
7 relative to the control device.

8 Q. And the next one.

9 You now have on the screen in front of you another
10 document. Does this refresh your recollection with regard to
11 this Progress Energy report with regard to Roxboro?

12 A. Right. It refreshed my memory in the sense that Roxboro
13 unit 2, and now 3, are on, and unit 1 is scheduled in
14 December to come on.

15 Q. In other words, so a second unit actually came on in
16 May?

17 A. Correct.

18 Q. Roxboro unit 3.

19 **MR. GULICK:** Thank you. Your Honor, I'd like to
20 move the introduction of Exhibit 10, which is the June 1,
21 2008, report of the implementation of the Clean Smokestacks
22 Act.

23 **THE COURT:** Let that be admitted.

24 **(Plaintiff's Exhibit No. 10 received.)**

25

1 **BY MR. GULICK:**

2 **Q.** Mr. Nicholson, I would like to draw your attention to
3 Plaintiff's Exhibit 13.

4 **MR. GULICK:** Excuse me. Exhibit 11. It would be
5 Exhibit 11. I apologize, Your Honor. Plaintiff's Exhibit
6 11.

7 **THE COURT:** All right. I have it.

8 **BY MR. GULICK:**

9 **Q.** And, Mr. Nicholson, do you know what this document is?

10 **A.** I'm familiar with it.

11 **Q.** What is it?

12 **A.** This is a technical support document, or a portion of
13 it, from USEPA for the CAIR rule, the Clear Air Interstate
14 Rule.

15 **Q.** And in the general matter, as a generate matter, just as
16 an overview, what does this document actually show?

17 **A.** It shows the results --

18 **MS. COOPER:** Objection; hearsay.

19 **THE COURT:** Overruled. Let me hear an answer.

20 **Q.** Mr. Nicholson, what -- as an overview, what does this
21 document show?

22 **A.** This reflects the results of EPA's air quality modeling
23 to support their Clean Air Interstate Rule.

24 **Q.** And what is the function of the Clean Air Interstate
25 Rule?

1 **A.** It was to reduce emissions of sulfur dioxide and NOx in
2 a number of eastern states in the U.S. as a multistate, main
3 multi-pollutants tool for the utility industry and other
4 large sources.

5 **Q.** And what was the basis for making requirement
6 reductions?

7 **A.** I think the EPA viewed that there was a requirement to
8 make these reductions over a broad eastern U.S. to allow
9 states, in fact, to obtain the ambient standards.

10 **Q.** So this was in connection with a significant
11 contribution to nonattainment?

12 **A.** Yes.

13 **Q.** And so what does this -- with respect to that, what does
14 this -- you indicated it reflects the air quality modeling.

15 **MR. GULICK:** Well, let's go to the -- let's go to
16 the next page of this document.

17 I guess we can go forward one more. Page 4. This
18 is page 4 of this document.

19 And, Your Honor, at the bottom of the page -- I
20 think we need to look at the bottom of the page, if you can
21 find it. At the bottom of the page you'll see, Your Honor, a
22 Bates stamp, which is NC244714.

23 **THE COURT:** Okay.

24 **BY MR. GULICK:**

25 **Q.** And what I would like to draw your attention to here,

1 Mr. Nicholson, are the parts of this chart that relate to
2 downwind nonattainment counties and they're identified for
3 North Carolina.

4 If you look at the left-hand side, you see state, North
5 Carolina, Catawba and Davidson Counties; is that correct?

6 **A.** That's correct.

7 **MR. GULICK:** And Gary, if you could highlight those
8 rows and then the list of upwind states and the caption at
9 the top and bring those forward so it makes the chart easier
10 to read. And highlight those and enlarge them on the screen.

11 Your Honor, we have these highlighted on the
12 screen. It may make it a little easier to see.

13 **BY MR. GULICK:**

14 **Q.** With respect to this, what does -- Mr. Nicholson, do you
15 understand what this chart represents?

16 **A.** It is a summary chart of the results of some modeling
17 that the USEPA did to understand the impacts of various
18 upwind states as listed in the major body of the table in the
19 columns to the right of the left two columns.

20 And these are -- this is a result of what we call zero
21 outruns. These are micrograms per cubic meter impacts from
22 those states. For example, Alabama has an impact of .28,
23 impact on Catawba County or Hickory, if you would. In North
24 Carolina --

25 **Q.** And .28 means what?

1 **A.** Impact of micrograms per cubic meter. And, likewise,
2 for Davidson County, Alabama has an impact of .23.

3 And just looking across at some we were looking at
4 earlier, Kentucky would be .29 impact on Catawba and .21
5 respectively on Davidson County, or Lexington.

6 **Q.** Now, I see we have the shorthand "AL" for Alabama and
7 "FL" for Florida and so on. Were there other states, upwind
8 states, or is this the sum total?

9 **A.** I don't know. There were more subsequent pages.

10 **MR. GULICK:** Could you go forward two pages, Gary?
11 Forward. It's going to be hard to ...

12 **BY MR. GULICK:**

13 **Q.** Actually, Mr. Nicholson, are you -- do we have a
14 prepared --

15 I'd like to draw your attention to Plaintiff's Exhibit
16 13 and ask you -- let's look at that now. Do you recognize
17 what this document is?

18 **A.** I do. It is a summary, a table, to summarize the
19 impacts from all the states that have an impact on both
20 Catawba and Davidson County in North Carolina from the
21 analysis summary that we just saw.

22 **Q.** And so this collects, on one page, information with
23 respect to Catawba and Davidson Counties and the states?

24 **A.** It does.

25 **Q.** And the source states?

1 **A.** It does, yes.

2 **Q.** And have you personally verified the accuracy of this --

3 **A.** I have, and, for example --

4 **Q.** -- with respect to the document --

5 **A.** I have.

6 **Q.** -- Plaintiff's Exhibit 11?

7 **A.** I have.

8 **Q.** And tell us what this Exhibit 13 shows.

9 **A.** Well, again, like we noted earlier in the big table,

10 Alabama's contribution to Hickory/Catawba County is

11 .28-micrograms per cubic meter, and Davidson is .23; and then

12 we can go down to other states and see contributions of

13 Kentucky, .29 and .21 respectively, and point out North

14 Carolina's own contribution to our two counties is .92 and

15 1.21 in this case and --

16 **Q.** Does Tennessee have a contribution?

17 **A.** Tennessee. Yes, they do, of .62 and .3 respectively.

18 Contributions to our North Carolina PM2.5 non-attained areas.

19 **Q.** With respect to Catawba County, what is the relationship

20 here in part of the -- if you can tell, from the contribution

21 from Tennessee, to Catawba County's PM and North Carolina's

22 contribution?

23 **A.** The observation is that North Carolina, on this table,

24 is the single largest contributor to Catawba County's air

25 quality issue there in terms of PM fine. Tennessee

1 contributes considerably more than many other states, maybe
2 not the most compared to North Carolina, but it's a
3 significant contributor.

4 Q. When you look at the bottom of this, with respect to
5 Catawba County, is there any other state other than North
6 Carolina that has -- how does Tennessee's compare to the
7 other states? Is there any one that's as large as that?

8 A. Ohio is just a small amount larger, at .63 contribution,
9 and Georgia is a little less than North Carolina and
10 Tennessee, at .56. And as we indicated earlier, Alabama is
11 .28.

12 Q. When we look down at the bottom, there are some totals,
13 out-of-state and in-state. Do you have any conclusions that
14 can be drawn about what those numbers are?

15 A. I think the first conclusion one has, while North
16 Carolina's impact is at .92, the largest single state, all of
17 the out-of-state impacts are very much larger than that. In
18 fact, North Carolina's impact appears to be less than 20
19 percent of the total impact from other states on the air
20 quality -- PM air quality issue in Hickory.

21 Q. When you say Hickory, you mean?

22 A. Catawba County.

23 Q. And the figure is a little different for Davidson?

24 A. It is.

25 Q. Is your conclusion basically the same?

1 **A.** Yeah, it's basically the same. It's not quite the same
2 multiple, but we can see a 1.21 compared to a, roughly, five
3 and a half micrograms-per-cubic-meter impact. So we're
4 talking about 25, 25 percent-plus impact from North Carolina,
5 and the majority being from out of state.

6 **Q.** And I think you already observed the contributions from
7 Kentucky and Alabama.

8 **A.** Kentucky is, again, in the same order of magnitude as
9 Alabama, at .29 and .21 micrograms.

10 **Q.** And that's for Catawba County?

11 **A.** For the two areas, Catawba and Davidson Counties.

12 **Q.** And when was the -- when was the evaluation -- when was
13 EPA's evaluation dated; do you recall?

14 **A.** I'm not sure I recall that right now.

15 **Q.** Let's go back to Plaintiff's Exhibit 11.

16 **A.** March of 2005.

17 **Q.** And -- all right.

18 **MR. GULICK:** I'd like to move the admission of
19 Plaintiff's Exhibit 11 and Exhibit 13 into evidence.

20 **THE COURT:** Let those be admitted.

21 **(Plaintiff's Exhibit Nos. 11 & 13 received.)**

22 **MR. GULICK:** Your Honor, that's all we have on
23 direct examination of this witness. And, of course, I'll
24 have to reserve, if necessary, the redirect, if necessary.

25 **THE COURT:** All right. You may proceed.

1 **MS. COOPER:** All right, Your Honor.

2 **CROSS EXAMINATION**

3 **BY MS. COOPER:**

4 **Q.** Now, you've testified about your role in and your
5 understanding with respect to the Clean Smokestacks Act,
6 correct?

7 **A.** Correct.

8 **Q.** And you said that your first involvement was in
9 approximately January of 2001; is that correct?

10 **A.** That's correct.

11 **Q.** And at that time, you were involved in a meeting with
12 some legislators; is that correct?

13 **A.** That's correct, the two primary sponsors of the
14 legislation.

15 **Q.** And there were also representatives of Duke and Progress
16 there?

17 **A.** They were.

18 **Q.** And some representatives of an environmental
19 organization?

20 **A.** That's correct.

21 **Q.** Now, at the meeting, isn't it true that Duke and
22 Progress reached a fairly quick agreement with the
23 environmental representatives about the level of caps on
24 emissions to be used?

25 **MR. GULICK:** Objection. If you know.

1 **THE COURT:** Overruled.

2 **THE WITNESS:** There was agreement at that meeting.

3 It happened in the meeting, if that's the definition of
4 quick.

5 **BY MS. COOPER:**

6 Q. Well, do you remember your deposition in April of 2007
7 in this case?

8 A. Yes.

9 Q. Do you have it there in front of you?

10 A. I do not.

11 **(Pause in the proceedings.)**

12 Q. Can you see that?

13 A. I don't have anything on my screen, no.

14 Okay.

15 Q. Now do you have it?

16 A. It was a quick flight.

17 **THE COURT:** Now it's on.

18 **BY MS. COOPER:**

19 Q. Can you take a look at page 33, line 21?

20 A. Cannot actually see the line. Oh, okay. I do.

21 Q. I'm sorry. You believe that -- page 74, line 13.

22 **MR. GULICK:** I'm sorry, what page are you on?

23 **MS. COOPER:** Can you get that?

24 **MS. GUILLEN:** I can't show you the line numbers.

25 Just a second.

1 BY MS. COOPER:

2 Q. Did you not say -- were you not asked at your deposition
3 on line 14:

4 "So in other words, Duke and Progress negotiated the cap
5 amounts that were required of them?"

6 And you said:

7 "Answer: Came to an agreement on it, yes."

8 A. Yes.

9 Q. And then: "Negotiated those amounts?"

10 And you said: "Well, there was not extensive discussion
11 at the meeting. They were proposed, and the environmental
12 community said, We're happy with that, and the two utility
13 companies said, Okay, we'll take that."

14 Is that correct?

15 A. That's correct.

16 And as I said earlier, our feeling was that
17 understanding these levels that were agreeable to both the
18 companies and environmental community did represent
19 significant reductions and would be very helpful to our
20 future strategies for ozone and PM fine and help visibility.
21 So we said that looks right to us.

22 Q. Well, your role in this meeting was apparently to offer
23 advice; is that correct?

24 A. I would say offer advice and interact as appropriate,
25 from representing the division and the department.

1 Q. And you offered the advice at this meeting that the caps
2 were appropriate?

3 A. I believe I did.

4 Q. And you offered that advice because Duke and Progress
5 had a history of buying emission allowances rather than
6 reducing emissions; isn't that right?

7 A. I think a lot of these considerations factored in,
8 certainly, our SAMI experience on the benefits we would get
9 from such reductions, the fact that both of these companies,
10 both of these companies, had excessive emissions without any
11 controls on SO2.

12 They did have considerable controls for NOx due to the
13 NOx SIP call, but that it was certainly in the ballpark of
14 what we would expect as a reasonable set of controls and it
15 seemed like the right level for us at the time. And I think
16 77 percent reduction in NOx, 73 percent in SO2, does
17 represent a significant reduction. We went from zero
18 scrubbers to what initially were 23 but now look like 20
19 scrubbers in the system and will meet these caps.

20 Q. Well, Mr. Nicholson, your exhibit, which, by the way is
21 TVA -- your deposition in April of '07, is TVA Exhibit 145 in
22 book No. 7.

23 A. I don't see it here.

24 Q. And if you'll take a look at page 79.

25 "Question" --

1 **A.** I'm sorry. I don't have it.

2 **Q.** It's over there on --

3 **MS. GUILLEN:** It's up on the screen.

4 **THE WITNESS:** Which book?

5 **BY MS. COOPER:**

6 **Q.** Book 7. It's also on the screen.

7 **A.** Okay. I see it now.

8 **Q.** Page 79.

9 "Question: Why did you think your reduction amounts
10 were appropriate?

11 "Answer: Well, they were pretty significant. I mean,
12 the reality is, in North Carolina, we did have zero
13 scrubbers. These utilities had a history under Title IV of
14 buying credits. So we had not yet gotten any reductions in
15 North Carolina, and we thought that was a very important
16 objective in North Carolina to get that."

17 Do you remember being asked that question and giving
18 that answer?

19 **A.** It looks very familiar, and I think I'd say the same
20 thing today as I pretty much just said, is that, for SO2, we
21 were not getting any reductions in North Carolina and that
22 was a key feature of the agreement, was these would be
23 reductions by controls in North Carolina, no use of credits
24 anymore, and that level of reduction seemed very appropriate
25 and consistent with what we would -- you know, would see

1 benefits as we saw in SAMI.

2 Q. But at the time that the Smokestacks Act was passed,
3 there were no scrubbers on any North Carolina utility; isn't
4 that right?

5 A. That is correct.

6 Q. All right. Now, the Division of Air Quality didn't do
7 any air quality modeling itself to decide whether the levels
8 of emission caps were appropriate, did it?

9 A. We did not. And I think I explained why we felt that
10 wasn't necessary.

11 Q. So as far as you know, the cap amounts were not set on
12 the basis of avoiding quantified health benefits or health
13 impacts?

14 A. What we did know, though, with these significant
15 reductions, and we had agreement. To get them capped in
16 North Carolina -- I keep wanting to emphasize that -- was
17 very important to us. These were very significant
18 reductions. And we did have the provision, as we noted
19 earlier in the bill, that if we have specific air quality
20 issues to deal with in a local area, we have the authority
21 right in the act to require further controls on specific
22 units to be --

23 Q. I don't think that quite answers my question, Mr.
24 Nicholson.

25 The question was: The cap amount set in the Smokestacks

1 Act were not set on the basis of quantified health benefits?

2 **A.** We did not do a specific analysis to analyze those, but
3 at the same time, we knew that was a very significant
4 progress forward in reducing emissions and it was a key to
5 air quality management strategy to get those emission
6 reductions down.

7 **Q.** The Smokestacks Act, I think you've mentioned, it's a
8 schedule for compliance. Isn't that right? A schedule by
9 Duke and Progress for compliance?

10 **A.** There are schedules built into the act, yes.

11 **Q.** And basically, the schedule for Duke and Progress to
12 come into full compliance with the caps was about ten and a
13 half years; isn't that right?

14 **A.** Well, they have to be in for the full year, if you're
15 talking about the second phase of SO₂ for the full year of
16 2013. So that implies they have to be with their controls in
17 place prior to that date.

18 **Q.** Well, the act was passed in 2002; isn't that right?

19 **A.** Correct.

20 **Q.** And they have to be compliant at the beginning -- the
21 end of 2012, beginning of 2013?

22 **A.** Correct.

23 **Q.** That's ten years plus, correct?

24 **A.** Correct.

25 **Q.** Now, at the January 20, 2001, meeting that you said you

1 attended, Duke and Progress and the environmental
2 representatives agreed on the schedule that was later
3 enacted; isn't that right?

4 **A.** That's correct.

5 **Q.** And you offered some advice about the schedule for Duke
6 and Progress; isn't that right?

7 **A.** I did offer advice in that I insisted that there be an
8 interim compliance date so that we would very clearly show
9 that there was actual progress, and that's how the first
10 phase got put in place.

11 **Q.** And you thought the schedule that the Smokestacks Act
12 provided for Duke and Progress was a reasonable one; isn't
13 that right?

14 **A.** I thought it was reasonable at that point in time, given
15 the uncertainties of the ability to comply, yes.

16 **Q.** Now, when you decided that the cap amounts were
17 appropriate, you didn't do any analysis of the costs of
18 complying with the cap, did you?

19 **A.** I did not.

20 **Q.** But --

21 **A.** But, I might add, we did understand that the utilities
22 had also done some work on cost, and that knowledge was
23 presented and seemed reasonable to the parties.

24 **Q.** Now, in 2001, there was a smokestacks bill that passed
25 the North Carolina Senate but not the House, isn't that

1 right?

2 **A.** Correct.

3 **Q.** The reason it got hung up in the House was concern over
4 cost; isn't that true?

5 **A.** The first version of the bill that you're referring to
6 did have a provision in there that there would be some rate
7 adjustments for the cost of the facilities; that is correct.

8 **Q.** And at the time, it was estimated that there would be a
9 rate adjustment of approximately 1 to 3 percent increase over
10 the cost --

11 **A.** That's my recollection and understanding, yes.

12 **Q.** And the breakthrough, the legislative breakthrough was
13 that there was a way to pass the law without requiring a rate
14 increase; isn't that true?

15 **A.** That is correct. And that came in the second-year
16 version of the bill.

17 **Q.** And the -- ultimately, the law was passed with a
18 five-year rate freeze, not a rate increase; isn't that right?

19 **A.** That is correct.

20 **Q.** Now, isn't it true that there are nine coal-burning
21 electricity generating plants in North Carolina that are not
22 covered by the Smokestacks Act?

23 **A.** There -- well, the Smokestacks Act covers the major
24 investor-owned utilities. There are some smaller co-gen
25 facilities in North Carolina.

1 Q. Isn't it true that these plants that are not covered by
2 the Smokestacks Act emit about 20,000 tons of sulfur dioxide
3 annually?

4 A. I don't have that figure in front of me or in mind.

5 Q. Well, let's turn to page 87 of your deposition. If
6 you'll take a look at line 21 on page 87 and going through to
7 page 88.

8 "Question: Are you telling me that there was no
9 consideration given to including these power plants in the
10 caps being imposed by the Clean Smokestacks Act?"

11 A. Right.

12 Q. "Answer: That's correct. We're talking 20,000 tons as
13 compared directly, 500,000, so these additional 20,000 tons
14 would deem to be a negligible amount."

15 Does that refresh your recollection?

16 A. It does, and I would say -- again today, I would say the
17 same thing. Just because they're not included in the Clean
18 Smokestacks Act, we would not have written off this as an
19 issue that might need to be addressed in a particular air
20 quality plan.

21 But, again, we had the opportunity to deal with 500,000
22 tons in a program that was agreeable and we were going to get
23 a very major reduction, so that seemed like an appropriate
24 opportunity to take to deal with the major source, and we
25 aren't giving up the authority or the ability to deal with

1 those others in any way.

2 Q. Well, let me ask you about one of those others. The
3 Blue Ridge Paper Products company.

4 A. Okay.

5 Q. That's one of those emitters that's not under the
6 Smokestacks Act; isn't that right?

7 A. That is correct.

8 Q. And that company operates a number of old coal-fire
9 boilers in Canton, North Carolina; isn't that right?

10 A. That is correct.

11 Q. And that's right here in the mountains of western North
12 Carolina, isn't it?

13 A. Correct.

14 Q. And they've been emitting in the vicinity of 800,000
15 tons of --

16 A. No.

17 Q. -- sulfur dioxide -- I'm sorry, 8,000 tons of sulfur
18 dioxide annually for a number of years; isn't that correct?

19 A. I believe it's in that ballpark.

20 Q. In fact, didn't did the Division of Air Quality issue
21 the plant an operating permit in December of '07, expressly
22 allowing them to emit 8200-plus tons of SO₂ annually?

23 A. I cannot recall exactly the date of issuance of a
24 permit, but they're operating under permits presently, yes.

25 Q. Do you recall the amount of SO₂ that they're allowed --

1 **A.** I do not expressly recall that, but I think you're in
2 the ballpark.

3 **Q.** All right. Now, are you aware of any complaints that
4 the Division of Air Quality has received about emissions from
5 Blue Ridge Paper Products?

6 **A.** There have been complaints over the years. Yes, I'm
7 aware.

8 **Q.** And do you recall a complaint from David Northcutt?

9 **A.** The name sounds familiar, but I cannot place a specific
10 complaint.

11 **Q.** Well, if you could turn to what has been marked as
12 Defendant's Exhibit 82.

13 Could you get it from your book over there? It's book
14 5.

15 **A.** Okay.

16 **MR. GULICK:** Did you say Exhibit 82?

17 **MS. COOPER:** 82.

18 **BY MS. COOPER:**

19 **Q.** I'd like you to take a look at that. First of all, can
20 you tell me what the letter is that's been marked as Exhibit
21 82?

22 **A.** This is a letter from our regional supervisor here in
23 the Asheville regional office, Paul Mueller, to Mrs. Esther
24 Clark in the office of Senator Elizabeth Dole in Raleigh.

25 **Q.** Would you take a look through that letter?

1 Do you remember seeing this letter before?

2 **A.** I do not remember seeing this letter.

3 **Q.** Would you take a look through it and see if that
4 refreshes your recollection at all about the complaint by Mr.
5 Northcutt.

6 **A.** Okay.

7 **Q.** Does that refresh your recollection at all?

8 **A.** I do recall that -- being aware of a complaint by an
9 individual about particles falling on a car. I guess I'm not
10 specifically familiar with this letter, but generally --

11 **Q.** Do you recall his complaint about his --

12 **A.** In a -- sort of remotely, I do.

13 **Q.** Do you recall that he also complained about the
14 potential effects of air emissions on his health?

15 **A.** I think I recall that.

16 **Q.** And do you also recall that the Division of Air Quality
17 responded to his concern by telling him that the -- all
18 National Ambient Air Quality Standards and State standards
19 were met in Canton and Haywood County?

20 **A.** I see that in the letter.

21 **Q.** So is it fair to say that, at least in responding to
22 this individual's fears about his health, the division
23 considered it appropriate to say we're meeting federal state
24 ambient air quality standards which are designed to protect
25 public health?

1 **A.** Let me mention that -- what I recall and what I see in
2 this letter reflects a report, an investigation of a
3 complaint of a nearby neighbor who apparently experienced
4 some material falling on his car, and I believe I recall that
5 he lives very close to the mill, and we certainly investigate
6 these kinds of situations and others routinely.

7 And as it was noted in the letter, it was reported back
8 to him that they were in compliance with permit conditions
9 and standards at this time and that -- I believe we said that
10 we invited him to again contact us if he experienced other
11 upset conditions, thinking this was an upset condition at the
12 mill.

13 **Q.** I don't think you exactly answered my question, Mr.
14 Nicholson.

15 The question has specifically to do with his fears about
16 his health and the response of the Division of Air Quality,
17 that the area was in attainment -- it determined that the
18 areas meet all National Ambient Air Quality Standards
19 established to protect human health.

20 **A.** We say that in the letter, and certainly we have issues
21 of complaints and concerns about health, not always verified
22 by tests that, in fact, there is a health -- in fact, a major
23 health problem there by, say, an unbiased party.

24 I'm not saying that he didn't have a serious and real
25 problem there, but I don't think this shows, quite frankly,

1 that -- or proves that there is an ambient air quality
2 violation there, in fact, at all.

3 So I think this is just an example of a complaint that
4 we occasionally get about an upset condition, it sounds like,
5 for something that's fallen out onto his car. Whether or not
6 that constitutes an actual health problem, I don't think
7 we've been shown that, or we haven't concluded that.

8 Q. But you did conclude that it was appropriate to respond
9 to the fear of a health concern by saying ambient air quality
10 standards were met?

11 A. We did.

12 Q. And those ambient air quality standards are set at a
13 national level which is designed to protect -- designed to
14 protect human health with an adequate margin of safety; isn't
15 that correct?

16 A. That is the original desire in the Clean Air Act, that
17 they be set at that level. I think what we've learned in
18 recent years with the latest standards for PM and ozone is
19 that, in fact, they are not likely set at that because they
20 have discovered there is no level of which there is an
21 adequate margin of safety that's readily --

22 Q. Let me ask you -- sorry for interrupting, but let me ask
23 you this question. Does North Carolina also set statewide
24 ambient air quality standards?

25 A. We have traditionally followed the federal standards in

1 setting them in our rules; that is correct.

2 Q. I believe you just indicated that you think there may be
3 some question about whether those standards are sufficiently
4 protective. Is that true?

5 A. I think that's what the recent science and understanding
6 is, in fact, serious question, as to whether the
7 administrator under the federal Clean Air Act is, in fact,
8 setting them at the proper level.

9 We understand that there's some frustration on the
10 administrator's part, he must set a standard -- certain
11 requirements for states to be submitted to EPA; however,
12 whether or not that's actually set at the right level or
13 there is a level they could even set it at, that's, I think,
14 a growing concern here.

15 Q. Well, doesn't North Carolina have the authority to set
16 ambient air quality standards below the national levels if it
17 feels the national levels aren't sufficiently protective of
18 human health?

19 A. I believe we do have the authority, but whether that's
20 the right policy decision to make is a different question.

21 Q. So you haven't done --

22 A. We have not --

23 Q. You haven't set standards lower in light of these --

24 A. Not recently, that's right.

25 Q. So currently the North Carolina standards are the same

1 as the federal standards; isn't that correct?

2 **A.** I think that's correct.

3 **Q.** If you believe that the federal and North Carolina
4 standards are not adequate to protect human health, wouldn't
5 you have an obligation to lower them?

6 **A.** Well, that would be, I think, a major policy call.

7 Whether or not we have an obligation, I'm not sure about
8 that.

9 The issue of setting a standard brings up a number of
10 policy questions that's lower than the federal standard. One
11 that comes to mind and we've thought about a little bit is if
12 we in North Carolina set a lower standard but none of our
13 neighboring states do and they design their strategies to
14 meet the higher standard, then we'll never get any additional
15 benefit of emissions reductions that they would put in their
16 strategies to help North Carolina. And there are other
17 implications about doing that.

18 I think one policy position to take is that we
19 concentrate our resources on emissions reductions knowing
20 that we'll get continued benefit from those and not
21 necessarily design it to a lower ambient standard.

22 **THE COURT:** All right. We're going to quit for
23 lunch on that point. We'll start back at 2:15.

24 Take a recess until 2:15.

25 (Lunch recess.)

1

2

3 UNITED STATES DISTRICT COURT
4 WESTERN DISTRICT OF NORTH CAROLINA
5 CERTIFICATE OF REPORTER

6

7 I certify that the foregoing transcript is a true
8 and correct transcript from the record of proceedings in the
9 above-entitled matter.

10

Dated this 15th day of July, 2008.

11

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S/ Karen H. Miller

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Karen H. Miller, RMR-CRR
Official Court Reporter

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